



Weatherford®

Weatherford
2000 Oil Drive
Casper, WY 82604

Survey Certification

Operating Company:	Anadarko Petroleum Corp.
Well Name:	Palyo 13N-11HZ
State:	Colorado
County:	Weld
API Number:	0512335457
Datum:	NAD 83
Survey Calculation Method:	Minimum Curvature
North Reference:	True North

I, John R. Morgan, hereby certify the attached
directional survey run from the measure depth of 971.00 feet
to the measured depth of 11,424.00 feet as accurate and true
to the best of my knowledge.

Signature

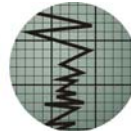
2-Nov-12

Date

John Morgan
Directional Planning
Weatherford - Rockies District



Weatherford®



FINAL SURVEYS.....SEC.1

DAILY ACTIVITY.....SEC.2

BHA REPORTS..... SEC.3

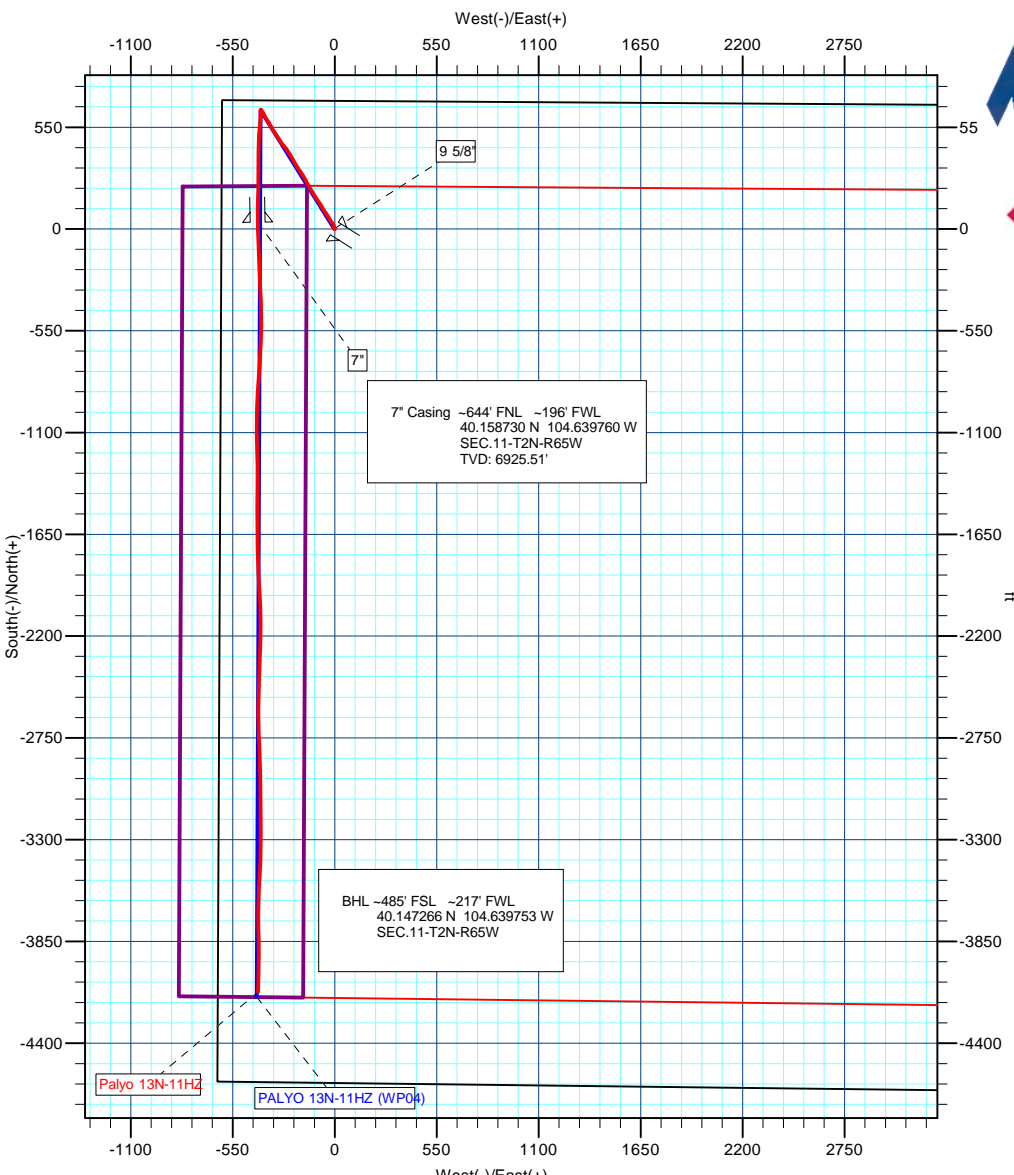
MOTOR REPORTS.....SEC.4

SLIDE REPORTSEC.5

Drilling Services-Denver, CO



FINAL SURVEYS



Weatherford®

Project: COLORADO NORTHERN - 83
Site: WELD_PALYO 4-11HZ Pad
Well: Palyo 13N-11HZ
Wellbore: Palyo 13N-11HZ
Section: SEC.11-T2N-R65W
SHL: 692' FNL 611' FWL
Design: Palyo 13N-11HZ
Latitude: 40.158587
Longitude: -104.638273
GL: 4856.00
KB: 16' RKB + 4856' GL @ 4872.00ft (XTREME 23)



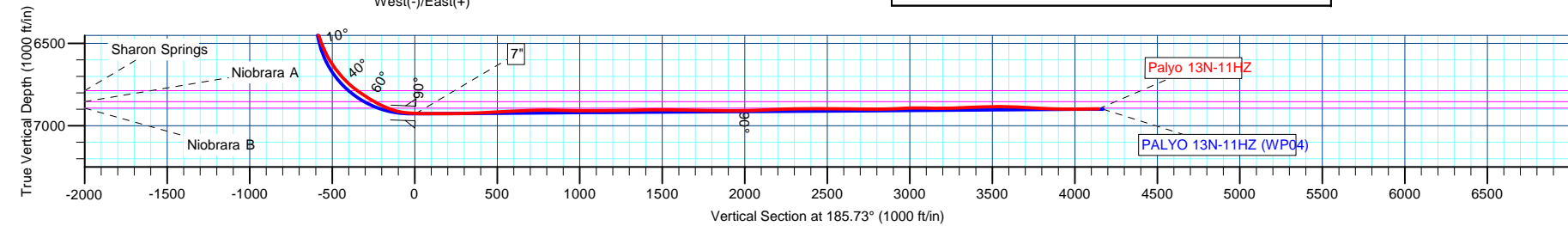
WELL DETAILS: Palyo 13N-11HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4856.00 Latitude 40.158587	Longitude -104.638273	Slot
0.00	0.00	1301786.72	3240850.73			

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	V/Sect	Departure	Annotation	
830.99	831.00	0.26	275.80	2.20	-1.79	-2.01	3.44	LAST GYRO SURVEY -- TIE ON	
970.99	971.00	0.31	321.00	2.52	-2.34	-2.28	4.13	FIRST MWD SURVEY	
6925.51	7299.34	86.58	179.61	51.98	-415.63	-10.23	1356.82	7" INTERMEDIATE CASING SET	
6898.44	11424.00	90.86	181.11	-4068.92	-412.70	4089.80	5479.89	LAST MWD SURVEY	
6897.62	11479.00	90.86	181.11	-4123.91	-413.77	4144.61	5534.89	PROJECTION TO TD	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Palyo 13N-11HZ BHL	6900.00	-4150.61	-420.72	40.147193	-104.639778	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3955.00	3987.71	Parkman
4438.00	4477.12	Sussex
6787.00	6927.30	Sharon Springs
6854.00	7050.79	Niobrara A
6893.00	7141.57	Niobrara B

CASING DETAILS			
TVD	MD	Name	Size
890.17	890.18	9 5/8"	9-5/8
6925.51	7299.34	7"	7



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_PALYO 4-11HZ Pad

Palyo 13N-11HZ

Palyo 13N-11HZ

Design: Palyo 13N-11HZ

Standard Survey Report

02 November, 2012

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Palyo 13N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Site:	WELD_PALYO 4-11HZ Pad	MD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Well:	Palyo 13N-11HZ	North Reference:	True
Wellbore:	Palyo 13N-11HZ	Survey Calculation Method:	Minimum Curvature
Design:	Palyo 13N-11HZ	Database:	edmp

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	WELD_PALYO 4-11HZ Pad, SEC.11-T2N-R65W				
Site Position:		Northing:	1,301,786.95 usft	Latitude:	40.158586
From:	Lat/Long	Easting:	3,240,910.54 usft	Longitude:	-104.638059
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.56 °

Well	Palyo 13N-11HZ					
Well Position	+N/-S	0.00 ft	Northing:	1,301,786.72 usft	Latitude:	40.158587
	+E/-W	0.00 ft	Easting:	3,240,850.73 usft	Longitude:	-104.638273
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,856.00 ft

Wellbore	Palyo 13N-11HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/16/2012	8.68	66.85	52,947

Design	Palyo 13N-11HZ				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	16.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	16.00	0.00	0.00	185.73	

Survey Program	Date	11/1/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
116.00	831.00	Survey #1 (Palyo 13N-11HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S	
971.00	11,479.00	Survey #2 (Palyo 13N-11HZ)	MWD	MWD - STANDARD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16.00	0.00	0.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00	
116.00	0.49	328.40	116.00	0.36	-0.22	-0.34	0.49	0.49	0.00	
216.00	0.31	353.43	216.00	1.00	-0.48	-0.94	0.25	-0.18	25.03	
316.00	0.23	16.82	316.00	1.46	-0.45	-1.41	0.13	-0.08	23.39	
416.00	0.11	242.55	416.00	1.61	-0.48	-1.55	0.32	-0.12	-134.27	
516.00	0.19	318.16	515.99	1.69	-0.67	-1.61	0.19	0.08	75.61	
616.00	0.17	270.93	615.99	1.81	-0.93	-1.71	0.15	-0.02	-47.23	
716.00	0.30	306.66	715.99	1.97	-1.29	-1.83	0.19	0.13	35.73	
816.00	0.26	284.64	815.99	2.18	-1.72	-2.00	0.11	-0.04	-22.02	
831.00	0.26	275.80	830.99	2.20	-1.79	-2.01	0.27	0.00	-58.93	

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Palyo 13N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Site:	WELD_PALYO 4-11HZ Pad	MD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Well:	Palyo 13N-11HZ	North Reference:	True
Wellbore:	Palyo 13N-11HZ	Survey Calculation Method:	Minimum Curvature
Design:	Palyo 13N-11HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
LAST GYRO SURVEY -- TIE ON									
890.18	0.26	296.78	890.17	2.27	-2.04	-2.05	0.16	0.00	35.46
9 5/8"									
971.00	0.31	321.00	970.99	2.52	-2.34	-2.28	0.16	0.06	29.96
FIRST MWD SURVEY									
1,064.00	0.22	5.33	1,063.99	2.90	-2.48	-2.63	0.23	-0.10	47.67
1,158.00	2.26	8.38	1,157.96	4.91	-2.20	-4.66	2.17	2.17	3.24
1,251.00	4.14	347.31	1,250.82	10.00	-2.67	-9.68	2.35	2.02	-22.66
1,345.00	6.14	337.63	1,344.44	17.96	-5.33	-17.34	2.31	2.13	-10.30
1,438.00	7.76	325.09	1,436.75	27.71	-10.81	-26.49	2.38	1.74	-13.48
1,523.00	9.20	326.19	1,520.82	38.06	-17.88	-36.08	1.70	1.69	1.29
1,609.00	9.50	324.65	1,605.68	49.56	-25.81	-46.74	0.45	0.35	-1.79
1,694.00	8.83	330.94	1,689.60	60.99	-33.04	-57.38	1.42	-0.79	7.40
1,779.00	8.87	331.09	1,773.58	72.42	-39.38	-68.13	0.05	0.05	0.18
1,865.00	8.56	324.53	1,858.59	83.44	-46.29	-78.40	1.21	-0.36	-7.63
1,950.00	8.48	325.09	1,942.66	93.73	-53.55	-87.92	0.14	-0.09	0.66
2,035.00	7.79	325.58	2,026.80	103.62	-60.39	-97.08	0.82	-0.81	0.58
2,120.00	7.66	332.38	2,111.03	113.40	-66.28	-106.21	1.09	-0.15	8.00
2,205.00	9.06	327.17	2,195.13	124.04	-72.53	-116.18	1.87	1.65	-6.13
2,291.00	10.17	328.28	2,279.92	136.19	-80.20	-127.50	1.31	1.29	1.29
2,376.00	9.59	326.83	2,363.66	148.50	-88.02	-138.97	0.74	-0.68	-1.71
2,462.00	9.04	326.31	2,448.52	160.12	-95.68	-149.76	0.65	-0.64	-0.60
2,547.00	8.05	323.73	2,532.58	170.47	-102.91	-159.35	1.25	-1.16	-3.04
2,633.00	9.16	329.70	2,617.61	181.24	-109.92	-169.36	1.66	1.29	6.94
2,718.00	8.72	327.02	2,701.58	192.48	-116.84	-179.86	0.71	-0.52	-3.15
2,803.00	8.06	324.88	2,785.67	202.76	-123.78	-189.39	0.86	-0.78	-2.52
2,889.00	9.16	330.34	2,870.70	213.64	-130.64	-199.53	1.59	1.28	6.35
2,974.00	11.21	332.96	2,954.36	226.88	-137.74	-212.00	2.47	2.41	3.08
3,059.00	10.86	333.28	3,037.78	241.39	-145.10	-225.70	0.42	-0.41	0.38
3,145.00	10.83	330.47	3,122.25	255.66	-152.72	-239.14	0.62	-0.03	-3.27
3,230.00	9.85	331.39	3,205.87	268.99	-160.14	-251.66	1.17	-1.15	1.08
3,315.00	9.04	330.45	3,289.71	281.18	-166.92	-263.12	0.97	-0.95	-1.11
3,400.00	8.94	326.66	3,373.67	292.51	-173.84	-273.69	0.71	-0.12	-4.46
3,486.00	7.90	329.48	3,458.74	303.18	-180.51	-283.65	1.30	-1.21	3.28
3,571.00	7.38	329.73	3,542.99	312.93	-186.23	-292.78	0.61	-0.61	0.29
3,656.00	8.28	320.87	3,627.20	322.39	-192.85	-301.53	1.77	1.06	-10.42
3,742.00	9.00	321.10	3,712.22	332.43	-200.98	-310.71	0.84	0.84	0.27
3,827.00	8.46	327.42	3,796.24	342.88	-208.52	-320.35	1.29	-0.64	7.44
3,913.00	8.79	333.39	3,881.27	354.08	-214.87	-330.86	1.11	0.38	6.94
3,998.00	9.85	331.40	3,965.14	366.27	-221.26	-342.35	1.30	1.25	-2.34
4,084.00	10.37	331.30	4,049.81	379.52	-228.50	-354.81	0.60	0.60	-0.12
4,170.00	8.83	330.04	4,134.60	392.03	-235.51	-366.56	1.81	-1.79	-1.47
4,255.00	8.22	330.22	4,218.66	402.96	-241.79	-376.80	0.72	-0.72	0.21

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Palyo 13N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Site:	WELD_PALYO 4-11HZ Pad	MD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Well:	Palyo 13N-11HZ	North Reference:	True
Wellbore:	Palyo 13N-11HZ	Survey Calculation Method:	Minimum Curvature
Design:	Palyo 13N-11HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,330.00	8.67	327.62	4,292.85	412.38	-247.48	-385.62	0.79	0.60	-3.47
4,426.00	9.73	322.83	4,387.61	424.96	-256.25	-397.25	1.36	1.10	-4.99
4,511.00	9.77	321.92	4,471.39	436.36	-265.04	-407.72	0.19	0.05	-1.07
4,597.00	9.40	320.23	4,556.19	447.50	-274.04	-417.91	0.54	-0.43	-1.97
4,682.00	9.09	323.84	4,640.08	458.26	-282.44	-427.77	0.77	-0.36	4.25
4,768.00	8.24	326.36	4,725.10	468.87	-289.86	-437.59	1.08	-0.99	2.93
4,853.00	8.38	327.48	4,809.21	479.17	-296.56	-447.17	0.25	0.16	1.32
4,938.00	8.61	326.14	4,893.28	489.67	-303.44	-456.93	0.36	0.27	-1.58
5,024.00	9.18	326.03	4,978.24	500.71	-310.86	-467.17	0.66	0.66	-0.13
5,109.00	8.61	328.68	5,062.22	511.77	-317.95	-477.47	0.83	-0.67	3.12
5,195.00	8.93	326.64	5,147.21	522.84	-324.97	-487.79	0.52	0.37	-2.37
5,280.00	8.72	327.91	5,231.21	533.81	-332.02	-498.00	0.34	-0.25	1.49
5,365.00	9.10	327.34	5,315.18	544.93	-339.07	-508.35	0.46	0.45	-0.67
5,450.00	8.71	331.09	5,399.16	556.22	-345.81	-518.92	0.82	-0.46	4.41
5,536.00	8.84	329.43	5,484.15	567.61	-352.32	-529.60	0.33	0.15	-1.93
5,621.00	9.85	327.62	5,568.02	579.37	-359.54	-540.59	1.24	1.19	-2.13
5,707.00	8.36	327.52	5,652.94	590.86	-366.83	-551.29	1.73	-1.73	-0.12
5,792.00	7.89	332.63	5,737.08	601.25	-372.83	-561.03	1.01	-0.55	6.01
5,877.00	6.44	333.26	5,821.42	610.69	-377.66	-569.94	1.71	-1.71	0.74
5,963.00	7.35	329.25	5,906.79	619.73	-382.64	-578.43	1.20	1.06	-4.66
6,048.00	6.60	331.04	5,991.16	628.67	-387.79	-586.82	0.92	-0.88	2.11
6,134.00	5.26	325.03	6,076.70	636.23	-392.44	-593.87	1.72	-1.56	-6.99
6,219.00	3.28	323.63	6,161.46	641.38	-396.12	-598.63	2.33	-2.33	-1.65
6,304.00	1.78	328.86	6,246.38	644.47	-398.24	-601.49	1.78	-1.76	6.15
6,340.00	1.19	328.27	6,282.37	645.27	-398.73	-602.24	1.64	-1.64	-1.64
6,387.00	1.82	203.43	6,329.36	645.00	-399.28	-601.91	5.71	1.34	-265.62
6,430.00	7.26	181.38	6,372.21	641.65	-399.62	-598.55	13.06	12.65	-51.28
6,473.00	12.49	179.23	6,414.56	634.28	-399.62	-591.22	12.19	12.16	-5.00
6,515.00	17.10	179.97	6,455.15	623.56	-399.56	-580.55	10.99	10.98	1.76
6,558.00	21.30	181.90	6,495.75	609.42	-399.81	-566.47	9.88	9.77	4.49
6,601.00	24.61	183.20	6,535.34	592.67	-400.57	-549.72	7.79	7.70	3.02
6,643.00	27.42	185.83	6,573.09	574.32	-402.04	-531.31	7.23	6.69	6.26
6,686.00	31.28	185.83	6,610.56	553.35	-404.18	-510.24	8.98	8.98	0.00
6,729.00	35.84	185.14	6,646.38	529.70	-406.45	-486.48	10.64	10.60	-1.60
6,772.00	40.35	182.61	6,680.22	503.24	-408.21	-459.97	11.10	10.49	-5.88
6,814.00	42.56	181.73	6,711.69	475.46	-409.26	-432.22	5.44	5.26	-2.10
6,857.00	46.55	180.94	6,742.33	445.30	-409.95	-402.15	9.37	9.28	-1.84
6,900.00	51.73	182.14	6,770.45	412.80	-410.84	-369.73	12.23	12.05	2.79
6,942.00	54.63	181.22	6,795.62	379.20	-411.82	-336.19	7.12	6.90	-2.19
6,985.00	56.99	180.18	6,819.78	343.64	-412.25	-300.77	5.84	5.49	-2.42
7,028.00	58.94	179.35	6,842.59	307.19	-412.10	-264.51	4.82	4.53	-1.93
7,070.00	62.63	179.53	6,863.08	270.54	-411.74	-228.08	8.79	8.79	0.43
7,113.00	65.77	180.93	6,881.80	231.83	-411.90	-189.55	7.87	7.30	3.26
7,156.00	69.21	182.17	6,898.26	192.13	-412.98	-149.94	8.43	8.00	2.88

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Palyo 13N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Site:	WELD_PALYO 4-11HZ Pad	MD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Well:	Palyo 13N-11HZ	North Reference:	True
Wellbore:	Palyo 13N-11HZ	Survey Calculation Method:	Minimum Curvature
Design:	Palyo 13N-11HZ	Database:	edmp

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7,199.00	76.24	181.31	6,911.02	151.11	-414.22	-109.01	16.46	16.35	-2.00	
7,241.00	80.95	181.20	6,919.32	109.97	-415.12	-67.97	11.22	11.21	-0.26	
7,265.00	83.56	180.75	6,922.56	86.19	-415.53	-44.28	11.03	10.88	-1.88	
7,299.34	86.58	179.61	6,925.51	51.98	-415.63	-10.23	9.39	8.79	-3.32	
7" INTERMEDIATE CASING SET - 7"										
7,346.00	90.68	178.07	6,926.62	5.36	-414.69	36.07	9.39	8.79	-3.30	
7,431.00	90.00	178.02	6,926.12	-79.59	-411.79	120.30	0.80	-0.80	-0.06	
7,517.00	89.82	176.74	6,926.25	-165.50	-407.86	205.39	1.50	-0.21	-1.49	
7,602.00	91.11	178.45	6,925.56	-250.42	-404.29	289.53	2.52	1.52	2.01	
7,687.00	91.85	177.43	6,923.37	-335.33	-401.24	373.71	1.48	0.87	-1.20	
7,773.00	93.00	178.07	6,919.73	-421.19	-397.86	458.80	1.53	1.34	0.74	
7,858.00	93.64	180.24	6,914.81	-506.03	-396.61	543.10	2.66	0.75	2.55	
7,943.00	92.84	181.80	6,910.00	-590.88	-398.12	627.67	2.06	-0.94	1.84	
8,029.00	91.42	183.48	6,906.81	-676.72	-402.08	713.48	2.56	-1.65	1.95	
8,114.00	90.12	183.69	6,905.66	-761.55	-407.40	798.41	1.55	-1.53	0.25	
8,199.00	89.14	184.01	6,906.21	-846.35	-413.10	883.36	1.21	-1.15	0.38	
8,284.00	88.27	182.13	6,908.13	-931.20	-417.65	968.25	2.44	-1.02	-2.21	
8,370.00	90.06	181.10	6,909.39	-1,017.15	-420.08	1,054.01	2.40	2.08	-1.20	
8,455.00	90.86	179.11	6,908.70	-1,102.15	-420.23	1,138.59	2.52	0.94	-2.34	
8,541.00	90.55	178.55	6,907.65	-1,188.12	-418.48	1,223.96	0.74	-0.36	-0.65	
8,626.00	91.23	179.39	6,906.33	-1,273.10	-416.95	1,308.36	1.27	0.80	0.99	
8,712.00	91.17	180.65	6,904.52	-1,359.08	-416.98	1,393.91	1.47	-0.07	1.47	
8,797.00	90.25	180.46	6,903.47	-1,444.06	-417.80	1,478.56	1.11	-1.08	-0.22	
8,883.00	88.89	179.53	6,904.12	-1,530.06	-417.80	1,564.13	1.92	-1.58	-1.08	
8,968.00	89.12	180.19	6,905.59	-1,615.05	-417.59	1,648.67	0.82	0.27	0.78	
9,054.00	89.01	179.10	6,907.00	-1,701.03	-417.05	1,734.17	1.27	-0.13	-1.27	
9,139.00	88.59	177.19	6,908.78	-1,785.96	-414.30	1,818.40	2.30	-0.49	-2.25	
9,224.00	89.94	177.12	6,909.87	-1,870.85	-410.09	1,902.44	1.59	1.59	-0.08	
9,310.00	91.42	176.94	6,908.85	-1,956.73	-405.63	1,987.45	1.73	1.72	-0.21	
9,395.00	92.34	177.95	6,906.06	-2,041.59	-401.84	2,071.51	1.61	1.08	1.19	
9,481.00	92.65	180.02	6,902.31	-2,127.49	-400.32	2,156.83	2.43	0.36	2.41	
9,566.00	91.42	181.12	6,899.30	-2,212.43	-401.17	2,241.43	1.94	-1.45	1.29	
9,652.00	90.99	181.62	6,897.49	-2,298.39	-403.22	2,327.16	0.77	-0.50	0.58	
9,737.00	90.18	181.95	6,896.62	-2,383.34	-405.87	2,411.96	1.03	-0.95	0.39	
9,822.00	89.69	182.36	6,896.72	-2,468.28	-409.07	2,496.79	0.75	-0.58	0.48	
9,908.00	89.47	181.25	6,897.35	-2,554.24	-411.77	2,582.58	1.32	-0.26	-1.29	
9,993.00	88.77	179.79	6,898.65	-2,639.22	-412.55	2,667.22	1.90	-0.82	-1.72	
10,079.00	89.51	177.61	6,899.94	-2,725.18	-410.59	2,752.56	2.68	0.86	-2.53	
10,164.00	91.36	176.90	6,899.30	-2,810.08	-406.52	2,836.62	2.33	2.18	-0.84	
10,249.00	92.96	177.77	6,896.09	-2,894.92	-402.57	2,920.65	2.14	1.88	1.02	
10,334.00	91.30	179.48	6,892.93	-2,979.83	-400.54	3,004.93	2.80	-1.95	2.01	
10,420.00	88.77	180.51	6,892.88	-3,065.82	-400.53	3,090.49	3.18	-2.94	1.20	
10,505.00	89.38	179.13	6,894.25	-3,150.81	-400.26	3,175.03	1.77	0.72	-1.62	

Anadarko Petroleum Corp

Survey Report

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Palyo 13N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Site:	WELD_PALYO 4-11HZ Pad	MD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Well:	Palyo 13N-11HZ	North Reference:	True
Wellbore:	Palyo 13N-11HZ	Survey Calculation Method:	Minimum Curvature
Design:	Palyo 13N-11HZ	Database:	edmp

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,591.00	91.11	179.28	6,893.89	-3,236.80	-399.07	3,260.47	2.02	2.01	0.17	
10,676.00	92.96	180.93	6,890.87	-3,321.74	-399.22	3,345.00	2.92	2.18	1.94	
10,762.00	92.22	181.48	6,886.98	-3,407.63	-401.03	3,430.64	1.07	-0.86	0.64	
10,847.00	90.86	183.11	6,884.70	-3,492.53	-404.43	3,515.45	2.50	-1.60	1.92	
10,932.00	87.72	183.41	6,885.75	-3,577.37	-409.27	3,600.36	3.71	-3.69	0.35	
11,018.00	87.04	180.94	6,889.68	-3,663.21	-412.53	3,686.10	2.98	-0.79	-2.87	
11,103.00	87.18	178.42	6,893.97	-3,748.10	-412.05	3,770.51	2.97	0.16	-2.96	
11,188.00	88.09	178.60	6,897.48	-3,832.99	-409.85	3,854.76	1.09	1.07	0.21	
11,273.00	89.32	180.96	6,899.40	-3,917.96	-409.52	3,939.27	3.13	1.45	2.78	
11,359.00	90.74	181.39	6,899.35	-4,003.94	-411.28	4,025.00	1.73	1.65	0.50	
11,424.00	90.86	181.11	6,898.44	-4,068.92	-412.70	4,089.80	0.47	0.18	-0.43	
LAST MWD SURVEY										
11,479.00	90.86	181.11	6,897.62	-4,123.91	-413.77	4,144.61	0.00	0.00	0.00	
PROJECTION TO TD										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
890.18	890.17	9 5/8"	9-5/8	12-1/4	
7,299.34	6,925.51	7"	7	7-1/2	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,987.71	3,957.00	Parkman			
4,477.12	4,440.00	Sussex			
6,927.30	6,789.00	Sharon Springs			
7,050.79	6,856.00	Niobrara A			
7,141.57	6,895.00	Niobrara B			

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
831.00	830.99	2.20	-1.79	LAST GYRO SURVEY -- TIE ON	
971.00	970.99	2.52	-2.34	FIRST MWD SURVEY	
7,299.34	6,925.51	51.98	-415.63	7" INTERMEDIATE CASING SET	
11,424.00	6,898.44	-4,068.92	-412.70	LAST MWD SURVEY	
11,479.00	6,897.62	-4,123.91	-413.77	PROJECTION TO TD	

Checked By: _____ Approved By: _____ Date: _____

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_PALYO 4-11HZ Pad

Palyo 13N-11HZ

Palyo 13N-11HZ

Design: Palyo 13N-11HZ

Survey Report - Geographic

02 November, 2012

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Palyo 13N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Site:	WELD_PALYO 4-11HZ Pad	MD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Well:	Palyo 13N-11HZ	North Reference:	True
Wellbore:	Palyo 13N-11HZ	Survey Calculation Method:	Minimum Curvature
Design:	Palyo 13N-11HZ	Database:	edmp

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	WELD_PALYO 4-11HZ Pad, SEC.11-T2N-R65W			
Site Position:		Northing:	1,301,786.95 usft	Latitude: 40.158586
From:	Lat/Long	Easting:	3,240,910.54 usft	Longitude: -104.638059
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.56 °

Well	Palyo 13N-11HZ			
Well Position	+N/-S	0.00 ft	Northing:	1,301,786.72 usft
	+E/-W	0.00 ft	Easting:	3,240,850.73 usft
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft
			Ground Level:	4,856.00 ft

Wellbore	Palyo 13N-11HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/16/2012	8.68	66.85	52,947

Design	Palyo 13N-11HZ			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 16.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	16.00	0.00	0.00	185.73

Survey Program	Date	11/1/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
116.00	831.00	Survey #1 (Palyo 13N-11HZ)	NS-GYRO-MS	NORTH SENSING GYROCOMPASSING M/S
971.00	11,479.00	Survey #2 (Palyo 13N-11HZ)	MWD	MWD - STANDARD

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
16.00	0.00	0.00	16.00	0.00	0.00	1,301,786.72	3,240,850.73	40.158587	-104.638273
116.00	0.49	328.40	116.00	0.36	-0.22	1,301,787.08	3,240,850.50	40.158588	-104.638274
216.00	0.31	353.43	216.00	1.00	-0.48	1,301,787.71	3,240,850.24	40.158590	-104.638275
316.00	0.23	16.82	316.00	1.46	-0.45	1,301,788.17	3,240,850.26	40.158591	-104.638275
416.00	0.11	242.55	416.00	1.61	-0.48	1,301,788.32	3,240,850.24	40.158591	-104.638275
516.00	0.19	318.16	515.99	1.69	-0.67	1,301,788.40	3,240,850.04	40.158592	-104.638276
616.00	0.17	270.93	615.99	1.81	-0.93	1,301,788.52	3,240,849.78	40.158592	-104.638277
716.00	0.30	306.66	715.99	1.97	-1.29	1,301,788.68	3,240,849.42	40.158592	-104.638278
816.00	0.26	284.64	815.99	2.18	-1.72	1,301,788.89	3,240,848.99	40.158593	-104.638279
831.00	0.26	275.80	830.99	2.20	-1.79	1,301,788.90	3,240,848.92	40.158593	-104.638280
LAST GYRO SURVEY -- TIE ON									

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Palyo 13N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Site:	WELD_PALYO 4-11HZ Pad	MD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Well:	Palyo 13N-11HZ	North Reference:	True
Wellbore:	Palyo 13N-11HZ	Survey Calculation Method:	Minimum Curvature
Design:	Palyo 13N-11HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
890.18	0.26	296.78	890.17	2.27	-2.04	1,301,788.97	3,240,848.67	40.158593	-104.638281
9 5/8"									
971.00	0.31	321.00	970.99	2.52	-2.34	1,301,789.22	3,240,848.36	40.158594	-104.638282
FIRST MWD SURVEY									
1,064.00	0.22	5.33	1,063.99	2.90	-2.48	1,301,789.59	3,240,848.22	40.158595	-104.638282
1,158.00	2.26	8.38	1,157.96	4.91	-2.20	1,301,791.61	3,240,848.48	40.158601	-104.638281
1,251.00	4.14	347.31	1,250.82	10.00	-2.67	1,301,796.69	3,240,847.97	40.158615	-104.638283
1,345.00	6.14	337.63	1,344.44	17.96	-5.33	1,301,804.62	3,240,845.23	40.158636	-104.638292
1,438.00	7.76	325.09	1,436.75	27.71	-10.81	1,301,814.32	3,240,839.65	40.158663	-104.638312
1,523.00	9.20	326.19	1,520.82	38.06	-17.88	1,301,824.60	3,240,832.48	40.158692	-104.638337
1,609.00	9.50	324.65	1,605.68	49.56	-25.81	1,301,836.03	3,240,824.44	40.158723	-104.638366
1,694.00	8.83	330.94	1,689.60	60.99	-33.04	1,301,847.38	3,240,817.10	40.158754	-104.638391
1,779.00	8.87	331.09	1,773.58	72.42	-39.38	1,301,858.76	3,240,810.65	40.158786	-104.638414
1,865.00	8.56	324.53	1,858.59	83.44	-46.29	1,301,869.71	3,240,803.63	40.158816	-104.638439
1,950.00	8.48	325.09	1,942.66	93.73	-53.55	1,301,879.93	3,240,796.27	40.158844	-104.638465
2,035.00	7.79	325.58	2,026.80	103.62	-60.39	1,301,889.75	3,240,789.33	40.158872	-104.638489
2,120.00	7.66	332.38	2,111.03	113.40	-66.28	1,301,899.47	3,240,783.35	40.158898	-104.638510
2,205.00	9.06	327.17	2,195.13	124.04	-72.53	1,301,910.05	3,240,777.00	40.158928	-104.638533
2,291.00	10.17	328.28	2,279.92	136.19	-80.20	1,301,922.12	3,240,769.21	40.158961	-104.638560
2,376.00	9.59	326.83	2,363.66	148.50	-88.02	1,301,934.35	3,240,761.28	40.158995	-104.638588
2,462.00	9.04	326.31	2,448.52	160.12	-95.68	1,301,945.90	3,240,753.50	40.159027	-104.638616
2,547.00	8.05	323.73	2,532.58	170.47	-102.91	1,301,956.18	3,240,746.17	40.159055	-104.638641
2,633.00	9.16	329.70	2,617.61	181.24	-109.92	1,301,966.88	3,240,739.05	40.159085	-104.638667
2,718.00	8.72	327.02	2,701.58	192.48	-116.84	1,301,978.06	3,240,732.02	40.159115	-104.638691
2,803.00	8.06	324.88	2,785.67	202.76	-123.78	1,301,988.27	3,240,724.99	40.159144	-104.638716
2,889.00	9.16	330.34	2,870.70	213.64	-130.64	1,301,999.08	3,240,718.02	40.159174	-104.638741
2,974.00	11.21	332.96	2,954.36	226.88	-137.74	1,302,012.25	3,240,710.79	40.159210	-104.638766
3,059.00	10.86	333.28	3,037.78	241.39	-145.10	1,302,026.69	3,240,703.29	40.159250	-104.638792
3,145.00	10.83	330.47	3,122.25	255.66	-152.72	1,302,040.88	3,240,695.53	40.159289	-104.638820
3,230.00	9.85	331.39	3,205.87	268.99	-160.14	1,302,054.14	3,240,687.98	40.159325	-104.638846
3,315.00	9.04	330.45	3,289.71	281.18	-166.92	1,302,066.27	3,240,681.09	40.159359	-104.638870
3,400.00	8.94	326.66	3,373.67	292.51	-173.84	1,302,077.53	3,240,674.06	40.159390	-104.638895
3,486.00	7.90	329.48	3,458.74	303.18	-180.51	1,302,088.13	3,240,667.28	40.159419	-104.638919
3,571.00	7.38	329.73	3,542.99	312.93	-186.23	1,302,097.83	3,240,661.47	40.159446	-104.638940
3,656.00	8.28	320.87	3,627.20	322.39	-192.85	1,302,107.22	3,240,654.76	40.159472	-104.638963
3,742.00	9.00	321.10	3,712.22	332.43	-200.98	1,302,117.18	3,240,646.53	40.159500	-104.638992
3,827.00	8.46	327.42	3,796.24	342.88	-208.52	1,302,127.55	3,240,638.89	40.159528	-104.639019
3,913.00	8.79	333.39	3,881.27	354.08	-214.87	1,302,138.70	3,240,632.43	40.159559	-104.639042
3,998.00	9.85	331.40	3,965.14	366.27	-221.26	1,302,150.82	3,240,625.92	40.159593	-104.639065
4,084.00	10.37	331.30	4,049.81	379.52	-228.50	1,302,164.00	3,240,618.56	40.159629	-104.639091
4,170.00	8.83	330.04	4,134.60	392.03	-235.51	1,302,176.44	3,240,611.42	40.159663	-104.639116
4,255.00	8.22	330.22	4,218.66	402.96	-241.79	1,302,187.30	3,240,605.04	40.159693	-104.639138
4,330.00	8.67	327.62	4,292.85	412.38	-247.48	1,302,196.68	3,240,599.26	40.159719	-104.639159
4,426.00	9.73	322.83	4,387.61	424.96	-256.25	1,302,209.17	3,240,590.36	40.159754	-104.639190
4,511.00	9.77	321.92	4,471.39	436.36	-265.04	1,302,220.48	3,240,581.46	40.159785	-104.639222
4,597.00	9.40	320.23	4,556.19	447.50	-274.04	1,302,231.53	3,240,572.36	40.159815	-104.639254
4,682.00	9.09	323.84	4,640.08	458.26	-282.44	1,302,242.21	3,240,563.85	40.159845	-104.639284
4,768.00	8.24	326.36	4,725.10	468.87	-289.86	1,302,252.75	3,240,556.33	40.159874	-104.639310
4,853.00	8.38	327.48	4,809.21	479.17	-296.56	1,302,262.98	3,240,549.52	40.159902	-104.639334
4,938.00	8.61	326.14	4,893.28	489.67	-303.44	1,302,273.42	3,240,542.55	40.159931	-104.639359
5,024.00	9.18	326.03	4,978.24	500.71	-310.86	1,302,284.38	3,240,535.02	40.159962	-104.639385
5,109.00	8.61	328.68	5,062.22	511.77	-317.95	1,302,295.37	3,240,527.82	40.159992	-104.639411
5,195.00	8.93	326.64	5,147.21	522.84	-324.97	1,302,306.38	3,240,520.69	40.160022	-104.639436
5,280.00	8.72	327.91	5,231.21	533.81	-332.02	1,302,317.28	3,240,513.54	40.160052	-104.639461
5,365.00	9.10	327.34	5,315.18	544.93	-339.07	1,302,328.32	3,240,506.38	40.160083	-104.639486

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Palyo 13N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Site:	WELD_PALYO 4-11HZ Pad	MD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Well:	Palyo 13N-11HZ	North Reference:	True
Wellbore:	Palyo 13N-11HZ	Survey Calculation Method:	Minimum Curvature
Design:	Palyo 13N-11HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,450.00	8.71	331.09	5,399.16	556.22	-345.81	1,302,339.55	3,240,499.53	40.160114	-104.639511
5,536.00	8.84	329.43	5,484.15	567.61	-352.32	1,302,350.88	3,240,492.91	40.160145	-104.639534
5,621.00	9.85	327.62	5,568.02	579.37	-359.54	1,302,362.57	3,240,485.58	40.160178	-104.639560
5,707.00	8.36	327.52	5,652.94	590.86	-366.83	1,302,373.99	3,240,478.17	40.160209	-104.639586
5,792.00	7.89	332.63	5,737.08	601.25	-372.83	1,302,384.32	3,240,472.07	40.160238	-104.639607
5,877.00	6.44	333.26	5,821.42	610.69	-377.66	1,302,393.71	3,240,467.15	40.160263	-104.639624
5,963.00	7.35	329.25	5,906.79	619.73	-382.64	1,302,402.70	3,240,462.08	40.160288	-104.639642
6,048.00	6.60	331.04	5,991.16	628.67	-387.79	1,302,411.59	3,240,456.85	40.160313	-104.639661
6,134.00	5.26	325.03	6,076.70	636.23	-392.44	1,302,419.10	3,240,452.13	40.160334	-104.639677
6,219.00	3.28	323.63	6,161.46	641.38	-396.12	1,302,424.22	3,240,448.40	40.160348	-104.639691
6,304.00	1.78	328.86	6,246.38	644.47	-398.24	1,302,427.29	3,240,446.25	40.160356	-104.639698
6,340.00	1.19	328.27	6,282.37	645.27	-398.73	1,302,428.08	3,240,445.75	40.160358	-104.639700
6,387.00	1.82	203.43	6,329.36	645.00	-399.28	1,302,427.80	3,240,445.20	40.160358	-104.639702
6,430.00	7.26	181.38	6,372.21	641.65	-399.62	1,302,424.45	3,240,444.90	40.160348	-104.639703
6,473.00	12.49	179.23	6,414.56	634.28	-399.62	1,302,417.08	3,240,444.96	40.160328	-104.639703
6,515.00	17.10	179.97	6,455.15	623.56	-399.56	1,302,406.36	3,240,445.13	40.160299	-104.639703
6,558.00	21.30	181.90	6,495.75	609.42	-399.81	1,302,392.23	3,240,445.02	40.160260	-104.639704
6,601.00	24.61	183.20	6,535.34	592.67	-400.57	1,302,375.47	3,240,444.42	40.160214	-104.639706
6,643.00	27.42	185.83	6,573.09	574.32	-402.04	1,302,357.10	3,240,443.13	40.160164	-104.639712
6,686.00	31.28	185.83	6,610.56	553.35	-404.18	1,302,336.12	3,240,441.19	40.160106	-104.639719
6,729.00	35.84	185.14	6,646.38	529.70	-406.45	1,302,312.44	3,240,439.16	40.160041	-104.639727
6,772.00	40.35	182.61	6,680.22	503.24	-408.21	1,302,285.97	3,240,437.65	40.159969	-104.639734
6,814.00	42.56	181.73	6,711.69	475.46	-409.26	1,302,258.17	3,240,436.87	40.159892	-104.639738
6,857.00	46.55	180.94	6,742.33	445.30	-409.95	1,302,228.02	3,240,436.47	40.159809	-104.639740
6,900.00	51.73	182.14	6,770.45	412.80	-410.84	1,302,195.51	3,240,435.90	40.159720	-104.639743
6,942.00	54.63	181.22	6,795.62	379.20	-411.82	1,302,161.90	3,240,435.25	40.159628	-104.639747
6,985.00	56.99	180.18	6,819.78	343.64	-412.25	1,302,126.33	3,240,435.16	40.159530	-104.639748
7,028.00	58.94	179.35	6,842.59	307.19	-412.10	1,302,089.89	3,240,435.67	40.159430	-104.639748
7,070.00	62.63	179.53	6,863.08	270.54	-411.74	1,302,053.24	3,240,436.38	40.159330	-104.639746
7,113.00	65.77	180.93	6,881.80	231.83	-411.90	1,302,014.54	3,240,436.60	40.159223	-104.639747
7,156.00	69.21	182.17	6,898.26	192.13	-412.98	1,301,974.83	3,240,435.90	40.159114	-104.639751
7,199.00	76.24	181.31	6,911.02	151.11	-414.22	1,301,933.80	3,240,435.06	40.159002	-104.639755
7,241.00	80.95	181.20	6,919.32	109.97	-415.12	1,301,892.65	3,240,434.56	40.158889	-104.639758
7,265.00	83.56	180.75	6,922.56	86.19	-415.53	1,301,868.87	3,240,434.39	40.158824	-104.639760
7,299.34	86.58	179.61	6,925.51	51.98	-415.63	1,301,834.66	3,240,434.61	40.158730	-104.639760
7" INTERMEDIATE CASING SET - 7"									
7,346.00	90.68	178.07	6,926.62	5.36	-414.69	1,301,788.05	3,240,436.01	40.158602	-104.639757
7,431.00	90.00	178.02	6,926.12	-79.59	-411.79	1,301,703.13	3,240,439.74	40.158369	-104.639747
7,517.00	89.82	176.74	6,926.25	-165.50	-407.86	1,301,617.26	3,240,444.50	40.158133	-104.639732
7,602.00	91.11	178.45	6,925.56	-250.42	-404.29	1,301,532.38	3,240,448.89	40.157900	-104.639720
7,687.00	91.85	177.43	6,923.37	-335.33	-401.24	1,301,447.50	3,240,452.77	40.157667	-104.639709
7,773.00	93.00	178.07	6,919.73	-421.19	-397.86	1,301,361.69	3,240,456.98	40.157431	-104.639697
7,858.00	93.64	180.24	6,914.81	-506.03	-396.61	1,301,276.86	3,240,459.06	40.157198	-104.639692
7,943.00	92.84	181.80	6,910.00	-590.88	-398.12	1,301,192.00	3,240,458.37	40.156965	-104.639698
8,029.00	91.42	183.48	6,906.81	-676.72	-402.08	1,301,106.12	3,240,455.24	40.156729	-104.639712
8,114.00	90.12	183.69	6,905.66	-761.55	-407.40	1,301,021.25	3,240,450.75	40.156497	-104.639731
8,199.00	89.14	184.01	6,906.21	-846.35	-413.10	1,300,936.40	3,240,445.87	40.156264	-104.639751
8,284.00	88.27	182.13	6,908.13	-931.20	-417.65	1,300,851.50	3,240,442.15	40.156031	-104.639767
8,370.00	90.06	181.10	6,909.39	-1,017.15	-420.08	1,300,765.53	3,240,440.56	40.155795	-104.639776
8,455.00	90.86	179.11	6,908.70	-1,102.15	-420.23	1,300,680.54	3,240,441.23	40.155562	-104.639777
8,541.00	90.55	178.55	6,907.65	-1,188.12	-418.48	1,300,594.59	3,240,443.82	40.155325	-104.639770
8,626.00	91.23	179.39	6,906.33	-1,273.10	-416.95	1,300,509.63	3,240,446.17	40.155092	-104.639765
8,712.00	91.17	180.65	6,904.52	-1,359.08	-416.98	1,300,423.66	3,240,446.98	40.154856	-104.639765
8,797.00	90.25	180.46	6,903.47	-1,444.06	-417.80	1,300,338.67	3,240,446.98	40.154623	-104.639768
8,883.00	88.89	179.53	6,904.12	-1,530.06	-417.80	1,300,252.67	3,240,447.82	40.154387	-104.639768

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Palyo 13N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Site:	WELD_PALYO 4-11HZ Pad	MD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Well:	Palyo 13N-11HZ	North Reference:	True
Wellbore:	Palyo 13N-11HZ	Survey Calculation Method:	Minimum Curvature
Design:	Palyo 13N-11HZ	Database:	edmp

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,968.00	89.12	180.19	6,905.59	-1,615.05	-417.59	1,300,167.69	3,240,448.86	40.154154	-104.639767
9,054.00	89.01	179.10	6,907.00	-1,701.03	-417.05	1,300,081.72	3,240,450.23	40.153917	-104.639765
9,139.00	88.59	177.19	6,908.78	-1,785.96	-414.30	1,299,996.82	3,240,453.80	40.153684	-104.639755
9,224.00	89.94	177.12	6,909.87	-1,870.85	-410.09	1,299,911.98	3,240,458.84	40.153451	-104.639740
9,310.00	91.42	176.94	6,908.85	-1,956.73	-405.63	1,299,826.15	3,240,464.13	40.153216	-104.639724
9,395.00	92.34	177.95	6,906.06	-2,041.59	-401.84	1,299,741.32	3,240,468.75	40.152983	-104.639711
9,481.00	92.65	180.02	6,902.31	-2,127.49	-400.32	1,299,655.44	3,240,471.10	40.152747	-104.639705
9,566.00	91.42	181.12	6,899.30	-2,212.43	-401.17	1,299,570.50	3,240,471.08	40.152514	-104.639708
9,652.00	90.99	181.62	6,897.49	-2,298.39	-403.22	1,299,484.52	3,240,469.86	40.152278	-104.639716
9,737.00	90.18	181.95	6,896.62	-2,383.34	-405.87	1,299,399.55	3,240,468.04	40.152044	-104.639725
9,822.00	89.69	182.36	6,896.72	-2,468.28	-409.07	1,299,314.58	3,240,465.67	40.151811	-104.639737
9,908.00	89.47	181.25	6,897.35	-2,554.24	-411.77	1,299,228.61	3,240,463.80	40.151575	-104.639746
9,993.00	88.77	179.79	6,898.65	-2,639.22	-412.55	1,299,143.62	3,240,463.85	40.151342	-104.639749
10,079.00	89.51	177.61	6,899.94	-2,725.18	-410.59	1,299,057.68	3,240,466.64	40.151106	-104.639742
10,164.00	91.36	176.90	6,899.30	-2,810.08	-406.52	1,298,972.83	3,240,471.53	40.150873	-104.639728
10,249.00	92.96	177.77	6,896.09	-2,894.92	-402.57	1,298,888.03	3,240,476.31	40.150640	-104.639713
10,334.00	91.30	179.48	6,892.93	-2,979.83	-400.54	1,298,803.14	3,240,479.17	40.150407	-104.639706
10,420.00	88.77	180.51	6,892.88	-3,065.82	-400.53	1,298,717.15	3,240,480.01	40.150171	-104.639706
10,505.00	89.38	179.13	6,894.25	-3,150.81	-400.26	1,298,632.17	3,240,481.11	40.149938	-104.639705
10,591.00	91.11	179.28	6,893.89	-3,236.80	-399.07	1,298,546.20	3,240,483.13	40.149702	-104.639701
10,676.00	92.96	180.93	6,890.87	-3,321.74	-399.22	1,298,461.27	3,240,483.80	40.149468	-104.639701
10,762.00	92.22	181.48	6,886.98	-3,407.63	-401.03	1,298,375.36	3,240,482.83	40.149233	-104.639708
10,847.00	90.86	183.11	6,884.70	-3,492.53	-404.43	1,298,290.43	3,240,480.25	40.149000	-104.639720
10,932.00	87.72	183.41	6,885.75	-3,577.37	-409.27	1,298,205.55	3,240,476.25	40.148767	-104.639737
11,018.00	87.04	180.94	6,889.68	-3,663.21	-412.53	1,298,119.68	3,240,473.82	40.148531	-104.639749
11,103.00	87.18	178.42	6,893.97	-3,748.10	-412.05	1,298,034.80	3,240,475.12	40.148298	-104.639747
11,188.00	88.09	178.60	6,897.48	-3,832.99	-409.85	1,297,949.93	3,240,478.15	40.148065	-104.639739
11,273.00	89.32	180.96	6,899.40	-3,917.96	-409.52	1,297,864.97	3,240,479.30	40.147832	-104.639738
11,359.00	90.74	181.39	6,899.35	-4,003.94	-411.28	1,297,778.98	3,240,478.38	40.147596	-104.639745
11,424.00	90.86	181.11	6,898.44	-4,068.92	-412.70	1,297,713.99	3,240,477.59	40.147417	-104.639750
LAST MWD SURVEY									
11,479.00	90.86	181.11	6,897.62	-4,123.91	-413.77	1,297,659.00	3,240,477.06	40.147266	-104.639753
PROJECTION TO TD									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
890.18	890.17	9 5/8"	9-5/8	12-1/4	
7,299.34	6,925.51	7"	7	7-1/2	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,987.71	3,957.00	Parkman			
4,477.12	4,440.00	Sussex			
6,927.30	6,789.00	Sharon Springs			
7,050.79	6,856.00	Niobrara A			
7,141.57	6,895.00	Niobrara B			

Anadarko Petroleum Corp

Survey Report - Geographic

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Palyo 13N-11HZ
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Site:	WELD_PALYO 4-11HZ Pad	MD Reference:	16' RKB + 4856' GL @ 4872.00ft (XTREME 23)
Well:	Palyo 13N-11HZ	North Reference:	True
Wellbore:	Palyo 13N-11HZ	Survey Calculation Method:	Minimum Curvature
Design:	Palyo 13N-11HZ	Database:	edmp

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
831.00	830.99	2.20	-1.79	LAST GYRO SURVEY -- TIE ON
971.00	970.99	2.52	-2.34	FIRST MWD SURVEY
7,299.34	6,925.51	51.98	-415.63	7" INTERMEDIATE CASING SET
11,424.00	6,898.44	-4,068.92	-412.70	LAST MWD SURVEY
11,479.00	6,897.62	-4,123.91	-413.77	PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____



DAILY ACTIVITY



Weatherford®

Daily Activity Report

Drilling Services
v4.2.2674

Day 1 - 2012/10/20

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: Duaine Bell, James Nunnelee
DIR Supervisor: Brian Trani, Steven Bumgarner
MWD Supervisor: Denny Palmer
Other: Eric Dearnen

GROUND ELEV: 4856 ft **START DEPTH:** 896.0 ft **PROGRESS:** 135.0 ft **DAILY COST:** USD\$18680.00
KB ELEV: 4872 ft **END DEPTH:** 1031.0 ft **AVG. ROP.:** 270.0 ft/hr **PREVIOUS COST:** USD\$0.00
TOTAL COST: USD\$18680.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-06:00	Other - See Comments - Standby Release Rig	6.00	896	n/a	21:00-21:30	Rig Repair	0.50	896	1
06:00-08:00	Move Rig	2.00	896	n/a	21:30-22:00	PU Directional Tools	0.50	896	1
08:00-11:00	Nipple Up BOPs	3.00	896	n/a	22:00-23:00	Trip In	1.00	896	1
11:00-18:00	Pressure Test - Test BOPs	7.00	896	n/a	23:00-23:25	Drill Out Flt, Shoe & Cmmt	0.42	896	1
18:00-19:00	Other - See Comments - Install wear bushing	1.00	896	n/a	23:25-23:35	Rotating With Motor	0.17	937	1
19:00-20:00	Rig Service	1.00	896	n/a	23:35-23:40	Circ & Accumulate Surveys	0.08	937	1
20:00-21:00	PU Directional Tools	1.00	896	1	23:40-24:00	Rotating With Motor	0.33	1031	1

TIME SUMMARY (hrs):

MOTOR DRILL: 0.50	ORIENTING HRS: 0.00	ROTARY DRILL: 0.00	ROTARY TORQUE: 4000 ft-lb	STRING WEIGHT 53000 lbs
TIME DRILL: 0.00	ROTATING HRS: 0.50	MOTOR HRS: 1.00	WOB SLIDING (HI): 12000 lbf	WOB ROTATE (HI): 14000 lbf
MOTOR REAM: 0.00		TRIP: 1.00	WOB SLIDING (LO): 5000 lbf	WOB ROTATE (LO): 8000 lbf
CIRC: 0.50	ROTARY DRILL: 0.00	OTHER: 22.00	RPM (ROTARY): 60 rpm	DRAG UP: 1000 lbf
MOTOR HRS: 1.00	DRILL HRS: 0.50	TOTAL HRS: 24.00	RPM (MOTOR): 162 rpm	DRAG DN: 1000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 1 **HOLE SIZE:** 8.75 in **SECTION TYPE:** Build & Hold **SURVEY TYPE:** Positive Pulse MWD
MANFCT.: Weatherford **STABILIZER:** No **SERIAL#:** 675-3611 **MODEL:** 7/8 5.0 Stg **LOBE CFG.:** 7/8
SETTING: 1.5 ° **KICKPAD:** No **SIZE:** 6 3/4" (171mm) **MTR HRS THIS DAY:** 0.9999999999999999 **MTR HRS TO DATE:** 0.9999999999999999
MANFCT: Hughes **BIT TYPE:** Hughes 5X18s **TYPE:** DP405 / 1.24TFA **NOZZLES:** 1.245 in² TFA
IADC BIT GRADE: 1 / 1 / WT / A / X / I / PN / TD

PUMP PARAMETERS

PRESSURE ON BTM: 1800 **PRESSURE OFF BTM:** 1200 **TOTAL FLOW RATE:** 581.44 gal/min
PUMP 1: TYPE: 1600 **EFF.:** 97.0% **SPM:** 70.00 **LINER:** 6.00 in **STROKE VOL.:** 4.2816 gal/stk
PUMP 2: TYPE: 1600 **EFF.:** 97.0% **SPM:** 70.00 **LINER:** 6.00 in **STROKE VOL.:** 4.2816 gal/stk
PUMP 3: TYPE: **EFF.:** 100.0% **SPM:** 0.00 **LINER:** 0.00 in **STROKE VOL.:** 0.0000 gal/stk

MUD RECORD

MUD TYPE: Polymer **VISC:** 29 sec/qt **WTR LOSS:** 0 cc/30min **PV:** 1 cP **YP:** 4 lb/100 ft² **pH:** 8
DENSITY: 8.4 lb/gal **GEL 0/10:** 0.00 lb/100 ft² **SAND:** 0 **SOLIDS:** 0.4 **OIL:** 0 **TEMP:** 88 °F
LIQUID BASE: Water **LIQUID RATE:** 0 gal/min **GAS TYPE:** **GAS RATE:** 0 cu ft/min

COMMENTS:

Call-out October 19th. Tools and hands on location.

Rig released 02:45 AM.

Skid rig. NUBOP. Test BOP. PU BHA start back nudge 4,300 FT 9.07 INC tangent.

Drill Cement, Float & Shoe.

Drill F/896' T/1,031'

CUSTOMER SIGNATURE: _____

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674**Day 2 - 2012/10/21****FILE #:** 4027385**JOB TYPE:** Horizontal**RIG & NO:** Xtreme 23**WELL NAME:** Palyo 13N-11HZ**COMPANY:** Anadarko Petroleum Corporation**SURFACE LOCATION:** Weld**SERVICE CO.:** Weatherford Directional**SURVEY TYPE:** HEL LWD**FIELD / LOCATION:** Wattenburg / CO / USA

Company Man: Duaine Bell, James Nunnelee
DIR Supervisor: Brian Trani, Steven Bumgarner
MWD Supervisor: Denny Palmer
Other: Eric Dearmen

GROUND ELEV: 4856 ft **START DEPTH:** 1031.0 ft **PROGRESS:** 3797.0 ft **DAILY COST:** USD\$12100.00
KB ELEV: 4872 ft **END DEPTH:** 4828.0 ft **AVG. ROP.:** 202.5 ft/hr **PREVIOUS COST:** USD\$18680.00
TOTAL COST: USD\$30780.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:50	Rotating With Motor	0.83	2095	1	13:20-13:25	Circ & Accumulate Surveys	0.08	2949	1
00:50-01:00	Circ & Accumulate Surveys	0.17	1031	1	13:25-13:35	Orienting With Motor	0.17	2971	1
01:00-01:30	Rotating With Motor	0.50	1124	1	13:35-14:05	Rotating With Motor	0.50	3119	1
01:30-01:35	Circ & Accumulate Surveys	0.08	1124	1	14:05-14:10	Circ & Accumulate Surveys	0.08	3119	1
01:35-01:40	Orienting With Motor - 20' 330M	0.08	1144	1	14:10-14:15	Orienting With Motor	0.08	3127	1
01:40-01:50	Rotating With Motor	0.17	1218	1	14:15-14:25	Rotating With Motor	0.17	3205	1
01:50-01:55	Circ & Accumulate Surveys	0.08	1218	1	14:25-14:35	Circ & Accumulate Surveys	0.17	3205	1
01:55-02:00	Orienting With Motor - 20' 310M	0.08	1238	1	14:35-14:45	Rotating With Motor	0.17	3290	1
02:00-02:10	Rotating With Motor	0.17	1311	1	14:45-14:50	Circ & Accumulate Surveys	0.08	3290	1
02:10-02:15	Circ & Accumulate Surveys	0.08	1311	1	14:50-15:10	Rotating With Motor	0.33	3375	1
02:15-02:20	Orienting With Motor - 18' 290M	0.08	1329	1	15:10-15:15	Circ & Accumulate Surveys	0.08	3375	1
02:20-02:30	Rotating With Motor	0.17	1405	1	15:15-15:20	Orienting With Motor	0.08	3385	1
02:30-02:35	Circ & Accumulate Surveys	0.08	1405	1	15:20-15:30	Rotating With Motor	0.17	3460	1
02:35-02:40	Orienting With Motor - 16' 45L	0.08	1421	1	15:30-15:45	Circ & Accumulate Surveys - Reboot MWD	0.25	3460	1
02:40-02:55	Rotating With Motor	0.25	1498	1	15:45-16:00	Rotating With Motor	0.25	3546	1
02:55-03:00	Circ & Accumulate Surveys	0.08	1498	1	16:00-16:05	Circ & Accumulate Surveys	0.08	3546	1
03:00-03:05	Orienting With Motor - 10' HSR	0.08	1508	1	16:05-16:15	Orienting With Motor	0.17	3556	1
03:05-03:15	Rotating With Motor	0.17	1583	1	16:15-16:35	Rotating With Motor	0.33	3631	1
03:15-03:20	Circ & Accumulate Surveys	0.08	1583	1	16:35-16:40	Circ & Accumulate Surveys	0.08	3631	1
03:20-03:30	Rotating With Motor	0.17	1669	1	16:40-17:05	Orienting With Motor	0.42	3655	1
03:30-03:35	Circ & Accumulate Surveys	0.08	1669	1	17:05-17:15	Rotating With Motor	0.17	3716	1
03:35-03:40	Orienting With Motor	0.08	1677	1	17:15-17:20	Circ & Accumulate Surveys	0.08	3716	1
03:40-04:00	Rotating With Motor	0.33	1754	1	17:20-17:40	Orienting With Motor - 20' 20R	0.33	3736	1
04:00-04:05	Circ & Accumulate Surveys	0.08	1754	1	17:40-17:50	Rotating With Motor	0.17	3802	1
04:05-04:30	Rotating With Motor	0.42	1839	1	17:50-17:55	Circ & Accumulate Surveys	0.08	3802	1
04:30-04:35	Circ & Accumulate Surveys	0.08	1839	1	17:55-18:05	Orienting With Motor - 8' 80R	0.17	3810	1
04:35-04:40	Orienting With Motor - 5' 90L	0.08	1844	1	18:05-18:35	Rotating With Motor	0.50	3887	1
04:40-05:00	Rotating With Motor	0.33	1925	1	18:35-18:40	Circ & Accumulate Surveys	0.08	3887	1
05:00-05:10	Circ & Accumulate Surveys	0.17	1925	1	18:40-18:50	Orienting With Motor - 12' 20R	0.17	3899	1
05:10-05:45	Rotating With Motor	0.58	2010	1	18:50-19:10	Rotating With Motor	0.33	3973	1
05:45-05:50	Circ & Accumulate Surveys	0.08	2010	1	19:10-19:15	Circ & Accumulate Surveys	0.08	3973	1
05:50-06:25	Rig Up - Install Rot Head	0.58	2010	1	19:15-19:25	Orienting With Motor - 12' HSL	0.17	3985	1
06:25-06:30	Circ & Accumulate Surveys	0.08	2095	1	19:25-19:45	Rotating With Motor	0.33	4058	1
06:30-06:35	Orienting With Motor	0.08	2107	1	19:45-19:50	Circ & Accumulate Surveys	0.08	4058	1
06:35-07:10	Rotating With Motor	0.58	2180	1	19:50-20:05	Rotating With Motor	0.25	4144	1
07:10-07:30	Orienting With Motor	0.33	2200	1	20:05-20:10	Circ & Accumulate Surveys	0.08	4144	1
07:30-08:05	Rotating With Motor	0.58	2265	1	20:10-20:20	Orienting With Motor - 10' 170L	0.17	4154	1
08:05-08:15	Circ & Accumulate Surveys	0.17	2265	1	20:20-20:40	Rotating With Motor	0.33	4230	1
08:15-08:20	Orienting With Motor	0.08	2280	1	20:40-20:45	Circ & Accumulate Surveys	0.08	4230	1

**Weatherford®**

Daily Activity Report

Drilling Services

v4.2.2674

Day 2 - 2012/10/21

08:20-08:50	Rotating With Motor	0.50	2351	1	20:45-21:00	Rotating With Motor	0.25	4315	1
08:50-09:00	Circ & Accumulate Surveys	0.17	2351	1	21:00-21:05	Circ & Accumulate Surveys	0.08	4315	1
09:00-09:40	Rotating With Motor	0.67	2436	1	21:05-21:20	Orienting With Motor - 10' 30L	0.25	4325	1
09:40-10:00	Rig Service	0.33	2436	1	21:20-21:40	Rotating With Motor	0.33	4400	1
10:00-10:10	Circ & Accumulate Surveys	0.17	2436	1	21:40-21:45	Circ & Accumulate Surveys	0.08	4400	1
10:10-10:45	Rotating With Motor	0.58	2522	1	21:45-21:50	Orienting With Motor - 8' 30L	0.08	4408	1
10:45-10:50	Circ & Accumulate Surveys	0.08	2522	1	21:50-22:10	Rotating With Motor	0.33	4486	1
10:50-11:20	Rotating With Motor	0.50	2607	1	22:10-22:15	Circ & Accumulate Surveys	0.08	4486	1
11:20-11:30	Circ & Accumulate Surveys	0.17	2607	1	22:15-22:30	Rotating With Motor	0.25	4571	1
11:30-11:40	Orienting With Motor	0.17	2627	1	22:30-22:35	Circ & Accumulate Surveys	0.08	4571	1
11:40-12:00	Rotating With Motor	0.33	2693	1	22:35-23:00	Rotating With Motor	0.42	4657	1
12:00-12:05	Circ & Accumulate Surveys	0.08	2693	1	23:00-23:05	Circ & Accumulate Surveys	0.08	4657	1
12:05-12:15	Rotating With Motor	0.17	2778	1	23:05-23:10	Orienting With Motor - 6' 90R	0.08	4663	1
12:15-12:20	Circ & Accumulate Surveys	0.08	2778	1	23:10-23:30	Rotating With Motor	0.33	4742	1
12:20-12:45	Rotating With Motor	0.42	2863	1	23:30-23:35	Circ & Accumulate Surveys	0.08	4742	1
12:45-12:50	Circ & Accumulate Surveys	0.08	2863	1	23:35-23:55	Rotating With Motor	0.33	4828	1
12:50-13:00	Orienting With Motor	0.17	2883	1	23:55-24:00	Circ & Accumulate Surveys	0.08	4828	1
13:00-13:20	Rotating With Motor	0.33	2949	1			0.00		

TIME SUMMARY (hrs):

MOTOR DRILL: 18.75	ORIENTING HRS: 3.75	ROTARY DRILL: 0.00	ROTARY TORQUE: 8000 ft-lb	STRING WEIGHT 125000 lbs
TIME DRILL: 0.00	ROTATING HRS: 15.00	MOTOR HRS: 23.08	WOB SLIDING (HI): 15000 lbf	WOB ROTATE (HI): 25000 lbf
MOTOR REAM: 0.00		TRIP: 0.00	WOB SLIDING (LO): 10000 lbf	WOB ROTATE (LO): 16000 lbf
CIRC: 4.33	ROTARY DRILL: 0.00	OTHER: 0.92	RPM (ROTARY): 60 rpm	DRAG UP: 20000 lbf
MOTOR HRS: 23.08	DRILL HRS: 18.75	TOTAL HRS: 24.00	RPM (MOTOR): 162 rpm	DRAG DN: 30000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 1	HOLE SIZE: 8.75 in	SECTION TYPE: Build & Hold	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-3611	MODEL: 7/8 5.0 Stg
SETTING: 1.5 °	KICKPAD: No	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Hughes	BIT TYPE: Hughes 5X18s	TYPE: DP405 / 1.24TFA	MTR HRS THIS DAY: 23.08333333
IADC BIT GRADE: 1 / 1 / WT / A / X / I / PN / TD			MTR HRS TO DATE: 24.08333333
			NOZZLES: 1.245 in ² TFA

PUMP PARAMETERS

PRESSURE ON BTM: 2600	PRESSURE OFF BTM: 1900	TOTAL FLOW RATE: 581.44 gal/min
PUMP 1: TYPE: 1600	EFF.: 97.0% SPM: 70.00	LINER: 6.00 in STROKE VOL.: 4.2816 gal/stk
PUMP 2: TYPE: 1600	EFF.: 97.0% SPM: 70.00	LINER: 6.00 in STROKE VOL.: 4.2816 gal/stk
PUMP 3: TYPE:	EFF.: 100.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Polymer	VISC: 28 sec/qt	WTR LOSS: 0 cc/30min	PV: 1 cP	YP: 4 lb/100 ft ²	pH: 8.6
DENSITY: 8.4 lb/gal	GEL 0/10: 0.00 lb/100 ft ²	SAND: 0	SOLIDS: 0.6	OIL: 0	TEMP: 102 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

COMMENTS:

Drill F/1,031' T/ 4,828'

At approx. 1600 MD drillstring started hopping. Autodriller had been set up with new parameters taken from other xtreme rigs that had been having similar problems, but with no luck preventing hop at ROPs greater than 200 ft/hr.

At approx. 2800 MD slowing the rotary to 25RPM mitigated hopping and ROP was increase from 200 to 450 ft/hr. By 3200 MD we were able to resume normal rotary speeds, 50-60 RPM, and hopping was completely gone.

CUSTOMER SIGNATURE:



Weatherford®

Daily Activity Report

Drilling Services
v4.2.2674

Day 3 - 2012/10/22

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: Duaine Bell, James Nunnelee
DIR Supervisor: Brian Trani, Steven Bumgarner
MWD Supervisor: Denny Palmer
Other: Eric Dearnen

GROUND ELEV: 4856 ft START DEPTH: 4828.0 ft PROGRESS: 1572.0 ft DAILY COST: USD\$18830.00
KB ELEV: 4872 ft END DEPTH: 6400.0 ft AVG. ROP.: 130.1 ft/hr PREVIOUS COST: USD\$30780.00
TOTAL COST: USD\$49610.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:40	Rig Service	0.67	4828	1	08:30-08:40	Circ & Accumulate Surveys	0.17	5767	1
00:40-00:50	Orienting With Motor - 6' HS	0.17	4834	1	08:40-09:20	Orienting With Motor	0.67	5787	1
00:50-01:15	Rotating With Motor	0.42	4913	1	09:20-09:50	Rotating With Motor	0.50	5852	1
01:15-01:20	Circ & Accumulate Surveys	0.08	4913	1	09:50-09:55	Circ & Accumulate Surveys	0.08	5852	1
01:20-01:40	Orienting With Motor - 10' HSL	0.33	4923	1	09:55-10:20	Rotating With Motor	0.42	5937	1
01:40-02:05	Rotating With Motor	0.42	4998	1	10:20-10:25	Circ & Accumulate Surveys	0.08	5937	1
02:05-02:15	Circ & Accumulate Surveys	0.17	4998	1	10:25-11:15	Orienting With Motor	0.83	5972	1
02:15-02:25	Orienting With Motor - 12' HSR	0.17	5010	1	11:15-11:30	Rotating With Motor	0.25	6023	1
02:25-02:50	Rotating With Motor	0.42	5084	1	11:30-11:40	Circ & Accumulate Surveys	0.17	6023	1
02:50-02:55	Circ & Accumulate Surveys	0.08	5084	1	11:40-11:45	Rotating With Motor	0.08	6056	1
02:55-03:15	Rotating With Motor	0.33	5169	1	11:45-12:05	Rig Repair - Controller Issues	0.33	6056	1
03:15-03:20	Circ & Accumulate Surveys	0.08	5169	1	12:05-12:20	Rotating With Motor	0.25	6108	1
03:20-03:35	Orienting With Motor - 14' HSL	0.25	5183	1	12:20-12:25	Circ & Accumulate Surveys	0.08	6108	1
03:35-03:55	Rotating With Motor	0.33	5255	1	12:25-13:00	Rotating With Motor	0.58	6194	1
03:55-04:00	Circ & Accumulate Surveys	0.08	5255	1	13:00-13:05	Circ & Accumulate Surveys	0.08	6194	1
04:00-04:10	Orienting With Motor - 10' HS	0.17	5265	1	13:05-13:20	Orienting With Motor	0.25	6214	1
04:10-04:35	Rotating With Motor	0.42	5340	1	13:20-13:40	Rotating With Motor	0.33	6279	1
04:35-04:45	Circ & Accumulate Surveys	0.17	5340	1	13:40-13:45	Circ & Accumulate Surveys	0.08	6279	1
04:45-05:00	Orienting With Motor - 14' HS	0.25	5354	1	13:45-14:10	Orienting With Motor	0.42	6294	1
05:00-05:15	Rotating With Motor	0.25	5425	1	14:10-14:30	Rotating With Motor	0.33	6364	1
05:15-05:20	Circ & Accumulate Surveys	0.08	5425	1	14:30-14:40	Circ & Accumulate Surveys	0.17	6364	1
05:20-05:50	Orienting With Motor	0.50	5437	1	14:40-15:05	Orienting With Motor	0.42	6400	1
05:50-06:10	Rotating With Motor	0.33	5510	1	15:05-15:10	Circ & Accumulate Surveys - TD Straighthole	0.08	6400	1
06:10-06:15	Circ & Accumulate Surveys	0.08	5510	1	15:10-17:15	Circulating	2.08	6400	1
06:15-06:45	Orienting With Motor	0.50	5530	1	17:15-19:35	POOH To Change BHA	2.33	6400	1
06:45-07:00	Rotating With Motor	0.25	5596	1	19:35-21:45	Change Bit And Motor	2.17	6400	2
07:00-07:10	Circ & Accumulate Surveys	0.17	5596	1	21:45-22:15	RIH	0.50	6400	2
07:10-07:45	Orienting With Motor	0.58	5626	1	22:15-23:15	Slip And Cut	1.00	6400	2
07:45-08:00	Rotating With Motor	0.25	5681	1	23:15-23:45	Rig Service	0.50	6400	2
08:00-08:05	Circ & Accumulate Surveys	0.08	5681	1	23:45-24:00	RIH	0.25	6400	2
08:05-08:30	Rotating With Motor	0.42	5767	1			0.00		

TIME SUMMARY (hrs):

MOTOR DRILL: 12.08	ORIENTING HRS: 5.50	ROTARY DRILL: 0.00
TIME DRILL: 0.00	ROTATING HRS: 6.58	MOTOR HRS: 16.25
MOTOR REAM: 0.00		TRIP: 3.08
CIRC: 4.17	ROTARY DRILL: 0.00	OTHER: 4.67
MOTOR HRS: 16.25	DRILL HRS: 12.08	TOTAL HRS: 24.00

DRILLING PARAMETERS:

ROTARY TORQUE:	STRING WEIGHT 0 lbs
WOB SLIDING (HI): 15000 lbf	WOB ROTATE (HI): 25000 lbf
WOB SLIDING (LO): 10000 lbf	WOB ROTATE (LO): 15000 lbf
RPM (ROTARY): 60 rpm	DRAG UP: 0 lbf
RPM (MOTOR): 162 rpm	DRAG DN: 0 lbf

— BHA / MOTOR / BIT INFORMATION: —

**Weatherford**

Daily Activity Report

Drilling Services
v4.2.2674**Day 3 - 2012/10/22**

BHA: 1	HOLE SIZE: 8.75 in	SECTION TYPE: Build & Hold	SURVEY TYPE: Positive Pulse MWD
MANFCT.: Weatherford	STABILIZER: No	SERIAL#: 675-3611	MODEL: 7/8 5.0 Stg
SETTING: 1.5 °	KICKPAD: No	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Hughes	BIT TYPE: Hughes 5X18s	TYPE: DP405 / 1.24TFA	MTR HRS THIS DAY: 16.25
IADC BIT GRADE: 1 / 1 / WT / A / X / I / PN / TD		NOZZLES: 1.245 in ² TFA	MTR HRS TO DATE: 40.3333333333

BHA: 2	HOLE SIZE: 8.75 in	SECTION TYPE: Curve	SURVEY TYPE: Positive Pulse MWD
MANFCT.: WFT	STABILIZER: No	SERIAL#: 675-3996	MODEL: 7/8 5.0 Stg.
SETTING: 2.38 °	KICKPAD: No	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Security	BIT TYPE: Security 5x18's	TYPE: FXD55M	MTR HRS THIS DAY: 0
IADC BIT GRADE: 1 / 1 / WT / G / X / I / NO / TD		NOZZLES: 1.245 in ² TFA	MTR HRS TO DATE: 0

PUMP PARAMETERS

PRESSURE ON BTM: 0	PRESSURE OFF BTM: 0	TOTAL FLOW RATE: 581.44 gal/min
PUMP 1: TYPE: 1600	EFF.: 97.0% SPM: 70.00	LINER: 6.00 in STROKE VOL.: 4.2816 gal/stk
PUMP 2: TYPE: 1600	EFF.: 97.0% SPM: 70.00	LINER: 6.00 in STROKE VOL.: 4.2816 gal/stk
PUMP 3: TYPE:	EFF.: 100.0% SPM: 0.00	LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Polymer	VISC: 34 sec/qt	WTR LOSS: 0 cc/30min	PV: 7 cP	YP: 11 lb/100 ft ²	pH: 8.4
DENSITY: 9 lb/gal	GEL 0/10: 4.00 lb/100 ft ²	SAND: 0.5	SOLIDS: 1.3	OIL: 0	TEMP: 113 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:	GAS RATE: 0 cu ft/min	

COMMENTS:

Drill F/ 4,828' T/6,400'

Circulate & POOH for curve assembly.

Change bit & motor.

From aprox. 5000 MD to 6000 MD we saw constant differential spikes both rotating and sliding. From 6000 to TD of straight-hole at 6400 MD, however, differential spiking went away, leading us to believe it was formation related.

POOH 12 ft before KOP. In the majority of cases kicking off 50ft early has only led to being too far ahead of curve early on. We agreed with company rep. that we would kick off closer to proposal this well.

CUSTOMER SIGNATURE:



Weatherford®

Daily Activity Report

Drilling Services
v4.2.2674

Day 4 - 2012/10/23

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: Duaine Bell, James Nunnelee
DIR Supervisor: Brian Trani, Steven Bumgarner
MWD Supervisor: Denny Palmer
Other: Eric Dearnen

GROUND ELEV: 4856 ft START DEPTH: 6400.0 ft PROGRESS: 640.0 ft DAILY COST: USD\$12450.00
KB ELEV: 4872 ft END DEPTH: 7040.0 ft AVG. ROP.: 38.8 ft/hr PREVIOUS COST: USD\$49610.00
TOTAL COST: USD\$62060.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-03:05	RIH	3.08	6400	2	14:00-14:05	Circ & Accumulate Surveys	0.08	6746	2
03:05-04:00	Orienting With Motor - 47' 180M	0.92	6447	2	14:05-14:25	Orienting With Motor	0.33	6770	2
04:00-04:05	Circ & Accumulate Surveys	0.08	6447	2	14:25-14:30	Rotating With Motor	0.08	6778	2
04:05-04:35	Orienting With Motor - 43' 180M	0.50	6490	2	14:30-14:55	Orienting With Motor	0.42	6789	2
04:35-04:40	Circ & Accumulate Surveys	0.08	6490	2	14:55-15:00	Circ & Accumulate Surveys	0.08	6789	2
04:40-05:00	Orienting With Motor - 15' HS	0.33	6505	2	15:00-15:20	Rig Service	0.33	6789	2
05:00-05:05	Circ & Accumulate Surveys - Checkshot	0.08	6505	2	15:20-15:30	Rotating With Motor	0.17	6801	2
05:05-05:20	Rotating With Motor	0.25	6510	2	15:30-17:45	Orienting With Motor	2.25	6832	2
05:20-05:50	Orienting With Motor	0.50	6533	2	17:45-17:55	Circ & Accumulate Surveys	0.17	6832	2
05:50-05:55	Circ & Accumulate Surveys	0.08	6533	2	17:55-18:05	Orienting With Motor	0.17	6839	2
05:55-06:05	Rotating With Motor	0.17	6541	2	18:05-18:20	Rotating With Motor	0.25	6854	2
06:05-06:30	Orienting With Motor	0.42	6575	2	18:20-18:45	Orienting With Motor	0.42	6874	2
06:30-06:35	Circ & Accumulate Surveys	0.08	6575	2	18:45-18:50	Circ & Accumulate Surveys	0.08	6874	2
06:35-06:45	Rotating With Motor	0.17	6585	2	18:50-19:20	Rig Service	0.50	6874	2
06:45-07:25	Orienting With Motor	0.67	6618	2	19:20-20:35	Orienting With Motor	1.25	6917	2
07:25-07:30	Circ & Accumulate Surveys	0.08	6618	2	20:35-20:40	Circ & Accumulate Surveys	0.08	6917	2
07:30-07:45	Rotating With Motor	0.25	6626	2	20:40-20:50	Rotating With Motor	0.17	6937	2
07:45-09:10	Rig Repair - Mud Pumps	1.42	6626	2	20:50-21:15	Orienting With Motor	0.42	6955	2
09:10-09:15	Rotating With Motor	0.08	6632	2	21:15-21:25	Rotating With Motor	0.17	6960	2
09:15-09:55	Orienting With Motor	0.67	6661	2	21:25-21:30	Circ & Accumulate Surveys	0.08	6960	2
09:55-10:00	Circ & Accumulate Surveys	0.08	6661	2	21:30-21:40	Rotating With Motor	0.17	6977	2
10:00-11:25	Orienting With Motor	1.42	6703	2	21:40-22:40	Orienting With Motor	1.00	7002	2
11:25-11:30	Circ & Accumulate Surveys	0.08	6703	2	22:40-22:45	Circ & Accumulate Surveys	0.08	7002	2
11:30-12:20	Orienting With Motor	0.83	6729	2	22:45-23:10	Rotating With Motor	0.42	7030	2
12:20-13:10	Wiper Trip - To 6400MD(top curve)	0.83	6729	2	23:10-24:00	Orienting With Motor	0.83	7040	2
13:10-14:00	Orienting With Motor	0.83	6746	2			0.00		

TIME SUMMARY (hrs):

MOTOR DRILL: 16.50	ORIENTING HRS: 14.17	ROTARY DRILL: 0.00
TIME DRILL: 0.00	ROTATING HRS: 2.33	MOTOR HRS: 17.83
MOTOR REAM: 0.00	TRIP: 3.92	
CIRC: 1.33	ROTARY DRILL: 0.00	OTHER: 2.25
MOTOR HRS: 17.83	DRILL HRS: 16.50	TOTAL HRS: 24.00

DRILLING PARAMETERS:

ROTARY TORQUE: 10000 ft-lb	STRING WEIGHT: 140000 lbs
WOB SLIDING (HI): 30000 lbf	WOB ROTATE (HI): 25000 lbf
WOB SLIDING (LO): 20000 lbf	WOB ROTATE (LO): 20000 lbf
RPM (ROTARY): 20 rpm	DRAG UP: 25000 lbf
RPM (MOTOR): 162 rpm	DRAG DN: 20000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 2	HOLE SIZE: 8.75 in	SECTION TYPE: Curve	SURVEY TYPE: Positive Pulse MWD
MANFCT.: WFT	STABILIZER: No	SERIAL#: 675-3996	MODEL: 7/8 5.0 Stg.
SETTING: 2.38 °	KICKPAD: No	SIZE: 6 3/4" (171mm)	LOBE CFG.: 7/8
MANFCT: Security	BIT TYPE: Security 5x18's	TYPE: FXD55M	MTR HRS THIS DAY: 17.833333333333333
IADC BIT GRADE: 1 / 1 / WT / G / X / I / NO / TD			TOTAL HRS TO DATE: 17.833333333333333



Weatherford

Daily Activity Report

Drilling Services
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Day 4 - 2012/10/23

PUMP PARAMETERS

PRESSURE ON BTM: 2800		PRESSURE OFF BTM: 2400		TOTAL FLOW RATE: 581.44 gal/min	
PUMP 1:	TYPE: 1600	EFF.: 97.0%	SPM: 70.00	LINER: 6.00 in	STROKE VOL.: 4.2816 gal/stk
PUMP 2:	TYPE: 1600	EFF.: 97.0%	SPM: 70.00	LINER: 6.00 in	STROKE VOL.: 4.2816 gal/stk
PUMP 3:	TYPE:	EFF.: 100.0%	SPM: 0.00	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Gelchem	VISC: 39 sec/qt	WTR LOSS: 2 cc/30min	PV: 16 cP	YP: 17 lb/100 ft ²	pH: 8.6
DENSITY: 9.9 lb/gal	GEL 0/10: 7.00 lb/100 ft ²	SAND: 0.9	SOLIDS: 1.52	OIL: 0	TEMP: 113 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

COMMENTS:

Trip in hole.

Drill F/ 6,400' T/ 7,040'

Curve was kicked off 12 feet early, rather than 50, to avoid getting too far ahead of the line and risk eating up pay zone.

We started rotating portions of each joint after seeing the second survey into the curve. We continued to back off, rotating 15 ft per joint, in order to bring us back in section after our initial launch ahead of the curve early on.

As with many curves almost all slides were up and to the left to keep azm from drifting right. This trend continued to TD of the curve.

The curve started out drilling quickly at 120 ft/hr and assy. delivered needed build rates easily. Aprox 200ft into curve motor started stalling and ROP was slowed from 100 ft/hr to around 60 ft/hr. This was around a 60ft. throw fault as indicated by seismic data. At nearly the same time that we began having difficulty sliding the assy. turned right 5 degrees in azm. A short trip 300ft into curve helped us get back to sliding at 80 ft/hr. 500 ft into the curve, however, we were back to stalling the motor and had a conference with Anadarko. The motor did not show signs of being weak; reactive torque was very strong, but weight continued to stack and then fall off causing stalls or differential spiking that destroyed tool faces. After discussing problem with customer, we brought lubes up to 2% and problem went away. The last 150ft of curve reqd. more lube sweeps mixed with walnut in order to slide without stack and stall issues. ROP slowed to 20-30 ft/hr.

CUSTOMER SIGNATURE: _____



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Daily Activity Report

Drilling Services
v4.2.2674

Day 5 - 2012/10/24

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: Duaine Bell, James Nunnelee
DIR Supervisor: Brian Trani, Steven Bumgarner
MWD Supervisor: Denny Palmer
Other: Eric Dearnen

GROUND ELEV: 4856 ft START DEPTH: 7040.0 ft PROGRESS: 285.0 ft DAILY COST: USD\$12450.00
KB ELEV: 4872 ft END DEPTH: 7325.0 ft AVG. ROP.: 20.2 ft/hr PREVIOUS COST: USD\$62060.00
TOTAL COST: USD\$74510.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:30	Orienting With Motor	0.50	7045	2	07:20-07:25	Circ & Accumulate Surveys	0.08	7173	2
00:30-00:35	Circ & Accumulate Surveys	0.08	7045	2	07:25-08:50	Orienting With Motor	1.42	7216	2
00:35-01:40	Orienting With Motor	1.08	7066	2	08:50-08:55	Circ & Accumulate Surveys	0.08	7216	2
01:40-01:45	Rotating With Motor	0.08	7071	2	08:55-09:20	Circulating - Mtg W/CUSTOMER	0.42	7216	2
01:45-02:10	Orienting With Motor	0.42	7081	2	09:20-12:00	Orienting With Motor	2.67	7259	2
02:10-02:30	Rotating With Motor	0.33	7088	2	12:00-12:05	Circ & Accumulate Surveys	0.08	7259	2
02:30-02:35	Circ & Accumulate Surveys	0.08	7088	2	12:05-12:35	Rotating With Motor	0.50	7269	2
02:35-02:50	Rotating With Motor	0.25	7098	2	12:35-14:45	Orienting With Motor	2.17	7301	2
02:50-04:15	Orienting With Motor	1.42	7130	2	14:45-14:55	Circ & Accumulate Surveys	0.17	7301	2
04:15-04:20	Circ & Accumulate Surveys	0.08	7130	2	14:55-15:50	Orienting With Motor - TD Curve	0.92	7325	2
04:20-05:50	Orienting With Motor	1.50	7156	2	15:50-18:30	Circulating	2.67	7325	2
05:50-06:30	Circ & Condition Mud - mix lube	0.67	7156	2	18:30-24:00	POOH To Run Casing	5.50	7325	2
06:30-07:20	Orienting With Motor	0.83	7173	2			0.00		

TIME SUMMARY (hrs):

MOTOR DRILL: 14.08	ORIENTING HRS: 12.92	ROTARY DRILL: 0.00	ROTARY TORQUE: 10000 ft-lb	STRING WEIGHT: 140000 lbs
TIME DRILL: 0.00	ROTATING HRS: 1.17	MOTOR HRS: 18.50	WOB SLIDING (HI): 30000 lbf	WOB ROTATE (HI): 25000 lbf
MOTOR REAM: 0.00		TRIP: 5.50	WOB SLIDING (LO): 20000 lbf	WOB ROTATE (LO): 20000 lbf
CIRC: 4.42	ROTARY DRILL: 0.00	OTHER: 0.00	RPM (ROTARY): 20 rpm	DRAG UP: 40000 lbf
MOTOR HRS: 18.50	DRILL HRS: 14.08	TOTAL HRS: 24.00	RPM (MOTOR): 162 rpm	DRAG DN: 25000 lbf

DRILLING PARAMETERS:

BHA / MOTOR / BIT INFORMATION:

BHA: 2 HOLE SIZE: 8.75 in SECTION TYPE: Curve SURVEY TYPE: Positive Pulse MWD
MANFCT.: WFT STABILIZER: No SERIAL#: 675-3996 MODEL: 7/8 5.0 Stg. LOBE CFG.: 7/8
SETTING: 2.38 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 18.5 MTR HRS TO DATE: 36.333333333333
MANFCT: Security BIT TYPE: Security 5x18's TYPE: FXD55M NOZZLES: 1.245 in² TFA
IADC BIT GRADE: 1 / 1 / WT / G / X / I / NO / TD

PUMP PARAMETERS

PRESSURE ON BTM: 3000 PRESSURE OFF BTM: 2500 TOTAL FLOW RATE: 581.44 gal/min
PUMP 1: TYPE: 1600 EFF.: 97.0% SPM: 70.00 LINER: 6.00 in STROKE VOL.: 4.2816 gal/stk
PUMP 2: TYPE: 1600 EFF.: 97.0% SPM: 70.00 LINER: 6.00 in STROKE VOL.: 4.2816 gal/stk
PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Gelchem VISC: 40 sec/qt WTR LOSS: 6.2 cc/30min PV: 15 cP YP: 16 lb/100 ft² pH: 8.5
DENSITY: 10.1 lb/gal GEL 0/10: 5.00 lb/100 ft² SAND: 0.25 SOLIDS: 3.1 OIL: 0 TEMP: 160 °F
LIQUID BASE: Water LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

COMMENTS:

Drill F/7,040' T/7325'



Daily Activity Report

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Day 5 - 2012/10/24

We were asked to bring the TVD at landing up 10ft after having already built over 60 degrees. When we told customer that it would require 16 degree doglegs to do so, they asked us to just do our best at bringing TVD up and try to bring it up 5 feet higher if possible. In doing this we had one rogue dogleg of 16 deg/hund.at 7200 MD. This was the only dogleg higher than 12 in the curve, except for the initial 13 created by our first slide in the curve, but necessitated running DQX casing at the base of the curve.

Curve was landed 3 ft high of the original target and 2 feet low of new target. We landed 37 feet down-range from the original proposal.

CUSTOMER SIGNATURE: _____

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Daily Activity Report

Drilling Services
v4.2.2674

Day 6 - 2012/10/25

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: James Nunnelee
 DIR Supervisor: Brian Trani, Jacob Hofer, Steven Bumgarner
 MWD Supervisor: Denny Palmer
 Other: Eric Dearmen, Stephen Gray

GROUND ELEV: 4856 ft START DEPTH: 7325.0 ft PROGRESS: 0.0 ft DAILY COST: USD\$16250.00
 KB ELEV: 4872 ft END DEPTH: 7325.0 ft AVG. ROP.: 0.0 ft/hr PREVIOUS COST: USD\$74510.00
 TOTAL COST: USD\$90760.00

WORK STATUS: Operating (All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-03:00	POOH To Run Casing	3.00	7325	2	08:30-20:00	Run Casing - Run 7 inch casing	11.50	7325	n/a
03:00-04:50	Lay Down Directional Tools	1.83	7325	2	20:00-22:00	Circ Bottoms Up	2.00	7325	n/a
04:50-08:30	Run Casing - Rig up casers	3.67	7325	n/a	22:00-24:00	Cement Casing	2.00	7325	n/a

TIME SUMMARY (hrs):

MOTOR DRILL: 0.00 ORIENTING HRS: 0.00 ROTARY DRILL: 0.00
 TIME DRILL: 0.00 ROTATING HRS: 0.00 MOTOR HRS: 0.00
 MOTOR REAM: 0.00 TRIP: 3.00
 CIRC: 0.00 ROTARY DRILL: 0.00 OTHER: 21.00
 MOTOR HRS: 0.00 DRILL HRS: 0.00 TOTAL HRS: 24.00

DRILLING PARAMETERS:

ROTARY TORQUE: STRING WEIGHT 140000 lbs
 WOB SLIDING (HI): 0 lbf WOB ROTATE (HI): 0 lbf
 WOB SLIDING (LO): 0 lbf WOB ROTATE (LO): 0 lbf
 RPM (ROTARY): DRAG UP: 40000 lbf
 RPM (MOTOR): DRAG DN: 25000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 2 HOLE SIZE: 8.75 in SECTION TYPE: Curve SURVEY TYPE: Positive Pulse MWD
 MANFCT.: WFT STABILIZER: No SERIAL#: 675-3996 MODEL: 7/8 5.0 Stg. LOBE CFG.: 7/8
 SETTING: 2.38 ° KICKPAD: No SIZE: 6 3/4" (171mm) MTR HRS THIS DAY: 0 MTR HRS TO DATE: 36.333333333333
 MANFCT: Security BIT TYPE: Security 5x18's TYPE: FXD55M NOZZLES: 1.245 in² TFA
 IADC BIT GRADE: 1 / 1 / WT / G / X / I / NO / TD

PUMP PARAMETERS

PRESSURE ON BTM: 3000 PRESSURE OFF BTM: 2500 TOTAL FLOW RATE: 581.44 gal/min
 PUMP 1: TYPE: 1600 EFF.: 97.0% SPM: 70.00 LINER: 6.00 in STROKE VOL.: 4.2816 gal/stk
 PUMP 2: TYPE: 1600 EFF.: 97.0% SPM: 70.00 LINER: 6.00 in STROKE VOL.: 4.2816 gal/stk
 PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Gelchem VISC: 41 sec/qt WTR LOSS: 6.5 cc/30min PV: 16 cP YP: 15 lb/100 ft² pH: 8.6
 DENSITY: 10.1 lb/gal GEL 0/10: 5.00 lb/100 ft² SAND: 0.25 SOLIDS: 3.1 OIL: 0 TEMP: 168 °F
 LIQUID BASE: Water LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

COMMENTS:

POOH to run 7". L/D tools. Run 7" casing. Cement.

Taget change sent 17:15PM. 6925 TVD @ 0 VS

CUSTOMER SIGNATURE: _____



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Daily Activity Report

Drilling Services
v4.2.2674

Day 7 - 2012/10/26

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: James Nunnelee
DIR Supervisor: Brian Trani, Jacob Hofer
Other: Eric Dearmen, Stephen Gray
MWD Supervisor: James Witherspoon

GROUND ELEV: 4856 ft START DEPTH: 7325.0 ft PROGRESS: 0.0 ft DAILY COST: USD\$28800.00
KB ELEV: 4872 ft END DEPTH: 7325.0 ft AVG. ROP.: 0.0 ft/hr PREVIOUS COST: USD\$90760.00
WORK STATUS: Operating (All units are imperial.) TOTAL COST: USD\$119560.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-03:00	Cement Casing	3.00	7325	n/a	06:00-16:00	Handle Directional Tools - See daily comments	10.00	7325	3
03:00-04:00	Other - See Comments - Rig down cementers	1.00	7325	n/a	16:00-24:00	RIH With New BHA - Circulate every 3000	8.00	7325	3
04:00-06:00	Other - See Comments - Pull landing joint	2.00	7325	n/a			0.00		

TIME SUMMARY (hrs):				DRILLING PARAMETERS:			
MOTOR DRILL:	0.00	ORIENTING HRS:	0.00	ROTARY DRILL:	0.00	ROTARY TORQUE:	STRING WEIGHT 0 lbs
TIME DRILL:	0.00	ROTATING HRS:	0.00	MOTOR HRS:	0.00	WOB SLIDING (HI):	0 lbf
MOTOR REAM:	0.00			TRIP:	8.00	WOB SLIDING (LO):	0 lbf
CIRC:	0.00	ROTARY DRILL:	0.00	OTHER:	16.00	RPM (ROTARY):	DRAG UP: 0 lbf
MOTOR HRS:	0.00	DRILL HRS:	0.00	TOTAL HRS:	24.00	RPM (MOTOR):	DRAG DN: 0 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 3 HOLE SIZE: 6.125 in SECTION TYPE: Lateral 1 SURVEY TYPE: HEL LWD
MANFCT.: WFT STABILIZER: No SERIAL#: 475-41092 MODEL: 6/7 7.0 Stg. LOBE CFG.: 6/7
SETTING: 1.5 ° KICKPAD: No SIZE: 4 3/4" (121mm) MTR HRS THIS DAY: 0 MTR HRS TO DATE: 0
MANFCT: Smith BIT TYPE: Smith 5x16s TYPE: SDi513 NOZZLES: 0.982 in² TFA
IADC BIT GRADE: 2 / 1 / WT / N / X / I / NO / TD

PUMP PARAMETERS

PRESSURE ON BTM: 0 PRESSURE OFF BTM: 1000 TOTAL FLOW RATE: 249.19 gal/min
PUMP 1: TYPE: 1600 EFF.: 97.0% SPM: 60.00 LINER: 6.00 in STROKE VOL.: 4.2816 gal/stk
PUMP 2: TYPE: 1600 EFF.: 97.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Gelchem VISC: 37 sec/qt WTR LOSS: 6.4 cc/30min PV: 10 cP YP: 11 lb/100 ft² pH: 8
DENSITY: 9.4 lb/gal GEL 0/10: 2.00 lb/100 ft² SAND: 0.25 SOLIDS: 2.6 OIL: 0 TEMP: 167 °F
LIQUID BASE: Water LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

COMMENTS:

Cement. Rig down casers. Pick up tools. RIH with BHA 3. Fill pipe and test tools every 3000'

Float collar @ 7208'. Shoe track @ 7300'.

Target change coming out from under shoe = 6925' TVD @ 0' VS with 91° INC

We were picking up 4.75 LWD tools for the lateral section of Palyo 13N-11HZ at ~0600 hrs. After assembling the tool string consisting of the HEL NW1989, Split IDS NW21994, and SAGR NW21990 programming began via the RFD cable currently in use running between the dog house and the directional trailer. The tool string components were programmed normally with no issues until the final step of programming the Controller, located in the HEL tool, when a Memory Error occurred. Troubleshooting began on the controller error and the Weatherford LWD coordinators were informed. The decision was made to lay down the Primary HEL NW1989 and pick up the Secondary HEL NW21991. Once the Secondary HEL tool (NW21991) was made up, programming began with the same result. The controller again displayed the same Memory Error. The Primary HEL tool (NW1989), now on the deck in front of the Directional shack, was then connected to for further troubleshooting. The Primary HEL tool programmed normal with no controller error. New communication cables were ran to the rig floor as they were now thought to be the issue. The new cables did not solve the issue. The Secondary HEL tool (NW21991) was laid down for more troubleshooting. When the Secondary HEL was connected to on the deck, the tool programmed normally with no errors. The decision was made to program and initialize the Secondary HEL tool



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Day 7 - 2012/10/26

(NW21991) on the deck and the IDS (NW21994) and SAGR (NW21990), still made up on the floor, separately, make them up in the tool string, and shallow hole test.

While performing the shallow hole test, an new error with the IDS occurred with the HEL and SAGR working correctly. A computer and new communication cable were brought to the rig floor for troubleshooting. A corrupted IDS calibration file was found, and the decision was made to lay the Primary IDS (NW21994) down and pick up the Secondary IDS (NW21996). How the file became corrupt is still being investigated by the coordinators and the field engineers.

The Secondary IDS was made up into the tool string and programmed. The tools programmed normally with no errors and a successful shallow hole test was conducted with the final tool sting consisting of the HEL NW21991, Split IDS NW21996, and SAGR NW21990.

NOTE: Target Change Requested - 2012/10/26 10:00

CUSTOMER SIGNATURE: _____

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Daily Activity Report

Drilling Services
v4.2.2674**Day 8 - 2012/10/27****FILE #:** 4027385**JOB TYPE:** Horizontal**RIG & NO:** Xtreme 23**WELL NAME:** Palyo 13N-11HZ**COMPANY:** Anadarko Petroleum Corporation**SURFACE LOCATION:** Weld**SERVICE CO.:** Weatherford Directional**SURVEY TYPE:** HEL LWD**FIELD / LOCATION:** Wattenburg / CO / USA

Company Man: James Nunnelee
DIR Supervisor: Brian Trani, Jacob Hofer
Other: Eric Dearmen, Stephen Gray
MWD Supervisor: James Witherspoon

GROUND ELEV: 4856 ft **START DEPTH:** 7325.0 ft **PROGRESS:** 1869.0 ft **DAILY COST:** USD\$18300.00
KB ELEV: 4872 ft **END DEPTH:** 9194.0 ft **AVG. ROP.:** 102.9 ft/hr **PREVIOUS COST:** USD\$119560.00
WORK STATUS: Operating (All units are imperial.) **TOTAL COST:** USD\$137860.00

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:30	RIH With Directional	0.50	7325	3	13:10-13:15	Circ & Accumulate Surveys	0.08	8254	3
00:30-02:15	Drill Out Flt, Shoe & Cmmt	1.75	7325	3	13:15-13:20	Circ & Accumulate Surveys	0.08	8254	3
02:15-02:25	Orienting With Motor	0.17	7335	3	13:20-13:50	Orienting With Motor	0.50	8269	3
02:25-03:30	Rotating With Motor	1.08	7401	3	13:50-14:30	Rotating With Motor	0.67	8339	3
03:30-03:35	Circ & Accumulate Surveys	0.08	7401	3	14:30-14:35	Circ & Accumulate Surveys	0.08	8339	3
03:35-04:25	Rotating With Motor	0.83	7486	3	14:35-15:00	Orienting With Motor	0.42	8363	3
04:25-04:30	Circ & Accumulate Surveys	0.08	7486	3	15:00-15:40	Rotating With Motor	0.67	8425	3
04:30-04:40	Orienting With Motor	0.17	7498	3	15:40-15:45	Circ & Accumulate Surveys	0.08	8425	3
04:40-05:20	Rotating With Motor	0.67	7572	3	15:45-15:55	Orienting With Motor	0.17	8435	3
05:20-05:30	Circ & Accumulate Surveys	0.17	7572	3	15:55-16:30	Rotating With Motor	0.58	8510	3
05:30-05:50	Orienting With Motor	0.33	7592	3	16:30-16:40	Circ & Accumulate Surveys	0.17	8510	3
05:50-06:25	Rotating With Motor	0.58	7657	3	16:40-17:05	Rotating With Motor	0.42	8596	3
06:25-06:30	Circ & Accumulate Surveys	0.08	7657	3	17:05-17:15	Circ & Accumulate Surveys	0.17	8596	3
06:30-07:10	Orienting With Motor	0.67	7667	3	17:15-17:25	Orienting With Motor	0.17	8606	3
07:10-07:45	Rotating With Motor	0.58	7742	3	17:25-17:55	Rotating With Motor	0.50	8681	3
07:45-07:50	Circ & Accumulate Surveys	0.08	7742	3	17:55-18:05	Circ & Accumulate Surveys	0.17	8681	3
07:50-08:10	Orienting With Motor	0.33	7757	3	18:05-18:35	Rotating With Motor	0.50	8767	3
08:10-08:40	Rotating With Motor	0.50	7828	3	18:35-18:45	Circ & Accumulate Surveys	0.17	8767	3
08:40-08:50	Circ & Accumulate Surveys	0.17	7828	3	18:45-19:20	Rotating With Motor	0.58	8852	3
08:50-09:00	Orienting With Motor	0.17	7848	3	19:20-20:00	Rig Service	0.67	8852	3
09:00-09:40	Rotating With Motor	0.67	7913	3	20:00-20:10	Circ & Accumulate Surveys	0.17	8852	3
09:40-09:45	Circ & Accumulate Surveys	0.08	7913	3	20:10-20:25	Orienting With Motor	0.25	8862	3
09:45-10:05	Orienting With Motor	0.33	7937	3	20:25-20:50	Rotating With Motor	0.42	8938	3
10:05-10:20	Rotating With Motor	0.25	7975	3	20:50-21:00	Circ & Accumulate Surveys	0.17	8938	3
10:20-10:25	Circ & Accumulate Surveys - Checkshot	0.08	7975	3	21:00-21:20	Orienting With Motor	0.33	8953	3
10:25-11:00	Rotating With Motor	0.58	7998	3	21:20-21:50	Rotating With Motor	0.50	9023	3
11:00-11:05	Circ & Accumulate Surveys	0.08	7998	3	21:50-22:00	Circ & Accumulate Surveys	0.17	9023	3
11:05-11:30	Orienting With Motor	0.42	8019	3	22:00-22:20	Orienting With Motor	0.33	9038	3
11:30-11:50	Rotating With Motor	0.33	8084	3	22:20-22:50	Rotating With Motor	0.50	9109	3
11:50-11:55	Circ & Accumulate Surveys	0.08	8084	3	22:50-23:00	Circ & Accumulate Surveys	0.17	9109	3
11:55-12:10	Orienting With Motor	0.25	8099	3	23:00-23:25	Orienting With Motor	0.42	9129	3
12:10-12:40	Rotating With Motor	0.50	8169	3	23:25-23:50	Rotating With Motor	0.42	9194	3
12:40-12:45	Circ & Accumulate Surveys	0.08	8169	3	23:50-24:00	Circ & Accumulate Surveys	0.17	9194	3
12:45-13:10	Rotating With Motor	0.42	8254	3			0.00		

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Daily Activity Report

Drilling Services
v4.2.2674

Day 8 - 2012/10/27

TIME SUMMARY (hrs):				DRILLING PARAMETERS:					
MOTOR DRILL:	18.17	ORIENTING HRS:	5.42	ROTARY DRILL:	0.00	ROTARY TORQUE:	11000 ft-lb	STRING WEIGHT	135000 lbs
TIME DRILL:	0.00	ROTATING HRS:	12.75	MOTOR HRS:	22.83	WOB SLIDING (HI):	25000 lbf	WOB ROTATE (HI):	25000 lbf
MOTOR REAM:	0.00			TRIP:	0.50	WOB SLIDING (LO):	15000 lbf	WOB ROTATE (LO):	10000 lbf
CIRC:	4.67	ROTARY DRILL:	0.00	OTHER:	0.67	RPM (ROTARY):	40-65 rpm	DRAG UP:	185000 lbf
MOTOR HRS:	22.83	DRILL HRS:	18.17	TOTAL HRS:	24.00	RPM (MOTOR):	240 rpm	DRAG DN:	105000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 3 HOLE SIZE: 6.125 in SECTION TYPE: Lateral 1 SURVEY TYPE: HEL LWD
 MANFCT.: WFT STABILIZER: No SERIAL#: 475-41092 MODEL: 6/7 7.0 Stg. LOBE CFG.: 6/7
 SETTING: 1.5 ° KICKPAD: No SIZE: 4 3/4" (121mm) MTR HRS THIS DAY: 22.833333333333333 MTR HRS TO DATE: 22.833333333333333
 MANFCT: Smith BIT TYPE: Smith 5x16s TYPE: SDi513 NOZZLES: 0.982 in² TFA
 IADC BIT GRADE: 2 / 1 / WT / N / X / I / NO / TD

PUMP PARAMETERS

PRESSURE ON BTM: 2500 PRESSURE OFF BTM: 1950 TOTAL FLOW RATE: 290.72 gal/min
 PUMP 1: TYPE: 1600 EFF.: 97.0% SPM: 70.00 LINER: 6.00 in STROKE VOL.: 4.2816 gal/stk
 PUMP 2: TYPE: 1600 EFF.: 97.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk
 PUMP 3: TYPE: EFF.: 100.0% SPM: 0.00 LINER: 0.00 in STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Gelchem VISC: 38 sec/qt WTR LOSS: 6.6 cc/30min PV: 10 cP YP: 14 lb/100 ft² pH: 8.7
 DENSITY: 9.9 lb/gal GEL 0/10: 3.00 lb/100 ft² SAND: 0.25 SOLIDS: 3.9 OIL: 0 TEMP: 186 °F
 LIQUID BASE: Water LIQUID RATE: 0 gal/min GAS TYPE: GAS RATE: 0 cu ft/min

COMMENTS:

RIH. Tag Cement @ 7130'. When we drilled the float collar we had a 2000 psi differential spike and auto driller also stacke 40k WOB. Went back to drilling and motor was acting normal.

Drill F/ 7325' T/ 9194'.

Received a target change from the company man @ 20:00. New target 6895' TVD @ 0' VS with a 90° INC.

Having to increase slide footage from 8900' on to try and hold angle. Drop 1° per 100' every survey.

NOTE: Target Change Requested - 2012/10/27 20:00

CUSTOMER SIGNATURE:

**Weatherford®**

Daily Activity Report

Drilling Services
v4.2.2674**Day 9 - 2012/10/28****FILE #:** 4027385**JOB TYPE:** Horizontal**RIG & NO:** Xtreme 23**WELL NAME:** Palyo 13N-11HZ**COMPANY:** Anadarko Petroleum Corporation**SURFACE LOCATION:** Weld**SERVICE CO.:** Weatherford Directional**SURVEY TYPE:** HEL LWD**FIELD / LOCATION:** Wattenburg / CO / USA**DIR Supervisor:** Brian Trani, Jacob Hofer, Steven Bumgarner**Company Man:** James Nunnelee**Other:** Eric Dearmen, Stephen Gray**GROUND ELEV:** 4856 ft**KB ELEV:** 4872 ft**START DEPTH:** 9194.0 ft**END DEPTH:** 11012.0 ft**PROGRESS:** 1818.0 ft**AVG. ROP.:** 95.7 ft/hr**DAILY COST:** USD\$18300.00**PREVIOUS COST:** USD\$137860.00**TOTAL COST:** USD\$156160.00**WORK STATUS:** Operating*(All units are imperial.)*

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:25	Orienting With Motor	0.42	9216	3	11:25-11:45	Orienting With Motor	0.33	10072	3
00:25-00:40	Rotating With Motor	0.25	9237	3	11:45-12:30	Rotating With Motor	0.75	10134	3
00:40-00:45	Circ & Accumulate Surveys - Checkshot	0.08	9237	3	12:30-13:10	Circ & Accumulate Surveys	0.67	10134	3
00:45-01:05	Orienting With Motor	0.33	9247	3	13:10-13:30	Orienting With Motor	0.33	10152	3
01:05-01:15	Rotating With Motor	0.17	9279	3	13:30-13:50	Rotating With Motor	0.33	10219	3
01:15-02:00	Circ Bottoms Up - Hi vis sweep	0.75	9279	3	13:50-14:00	Circ & Accumulate Surveys	0.17	10219	3
02:00-02:10	Circ & Accumulate Surveys	0.17	9279	3	14:00-14:25	Orienting With Motor	0.42	10237	3
02:10-02:30	Orienting With Motor	0.33	9289	3	14:25-14:40	Rotating With Motor	0.25	10304	3
02:30-02:45	Rotating With Motor	0.25	9322	3	14:40-14:45	Circ & Accumulate Surveys	0.08	10304	3
02:45-02:50	Circ & Accumulate Surveys - Checkshot	0.08	9322	3	14:45-15:00	Orienting With Motor	0.25	10304	3
02:50-03:20	Rotating With Motor	0.50	9365	3	15:00-15:40	Rotating With Motor	0.67	10389	3
03:20-03:30	Circ & Accumulate Surveys	0.17	9365	3	15:40-15:45	Circ & Accumulate Surveys	0.08	10389	3
03:30-03:55	Orienting With Motor	0.42	9380	3	15:45-16:15	Orienting With Motor	0.50	10401	3
03:55-04:20	Rotating With Motor	0.42	9450	3	16:15-16:35	Rotating With Motor	0.33	10475	3
04:20-04:30	Circ & Accumulate Surveys	0.17	9450	3	16:35-16:40	Circ & Accumulate Surveys	0.08	10475	3
04:30-05:05	Orienting With Motor	0.58	9465	3	16:40-17:10	Orienting With Motor	0.50	10493	3
05:05-05:30	Rotating With Motor	0.42	9536	3	17:10-17:40	Rotating With Motor	0.50	10560	3
05:30-05:40	Circ & Accumulate Surveys	0.17	9536	3	17:40-17:45	Circ & Accumulate Surveys	0.08	10560	3
05:40-06:10	Orienting With Motor	0.50	9557	3	17:45-18:05	Orienting With Motor	0.33	10580	3
06:10-06:50	Rotating With Motor	0.67	9621	3	18:05-18:40	Rotating With Motor	0.58	10646	3
06:50-06:55	Circ & Accumulate Surveys	0.08	9621	3	18:40-18:45	Circ & Accumulate Surveys	0.08	10646	3
06:55-07:05	Orienting With Motor	0.17	9631	3	18:45-19:05	Orienting With Motor	0.33	10666	3
07:05-07:45	Rotating With Motor	0.67	9707	3	19:05-19:30	Rotating With Motor	0.42	10731	3
07:45-07:55	Circ & Accumulate Surveys	0.17	9707	3	19:30-19:35	Circ & Accumulate Surveys	0.08	10731	3
07:55-08:30	Rig Service	0.58	9707	3	19:35-20:05	Orienting With Motor	0.50	10751	3
08:30-08:50	Rotating With Motor	0.33	9792	3	20:05-20:30	Rotating With Motor	0.42	10817	3
08:50-08:55	Circ & Accumulate Surveys	0.08	9792	3	20:30-20:35	Circ & Accumulate Surveys	0.08	10817	3
08:55-09:25	Rotating With Motor	0.50	9877	3	20:35-21:05	Rig Service	0.50	10817	3
09:25-09:35	Circ & Accumulate Surveys	0.17	9877	3	21:05-21:50	Orienting With Motor	0.75	10845	3
09:35-09:55	Orienting With Motor	0.33	9892	3	21:50-22:15	Rotating With Motor	0.42	10902	3
09:55-10:15	Rotating With Motor	0.33	9963	3	22:15-22:20	Circ & Accumulate Surveys	0.08	10902	3
10:15-10:25	Circ & Accumulate Surveys	0.17	9963	3	22:20-22:50	Orienting With Motor	0.50	10918	3
10:25-11:00	Orienting With Motor	0.58	9983	3	22:50-23:20	Rotating With Motor	0.50	10987	3
11:00-11:20	Rotating With Motor	0.33	9983	3	23:20-23:25	Circ & Accumulate Surveys	0.08	10987	3
11:20-11:25	Circ & Accumulate Surveys	0.08	9983	3	23:25-24:00	Orienting With Motor	0.58	11012	3

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Daily Activity Report

Drilling Services

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Day 9 - 2012/10/28

TIME SUMMARY (hrs):			DRILLING PARAMETERS:		
MOTOR DRILL: 19.00	ORIENTING HRS: 9.00	ROTARY DRILL: 0.00	ROTARY TORQUE: 12000 ft-lb	STRING WEIGHT	135000 lbs
TIME DRILL: 0.00	ROTATING HRS: 10.00	MOTOR HRS: 22.92	WOB SLIDING (HI): 35000 lbf	WOB ROTATE (HI):	24000 lbf
MOTOR REAM: 0.00		TRIP: 0.00	WOB SLIDING (LO): 20000 lbf	WOB ROTATE (LO):	15000 lbf
CIRC: 3.92	ROTARY DRILL: 0.00	OTHER: 1.08	RPM (ROTARY): 40-55 rpm	DRAG UP:	190000 lbf
MOTOR HRS: 22.92	DRILL HRS: 19.00	TOTAL HRS: 24.00	RPM (MOTOR): 240 rpm	DRAG DN:	100000 lbf

BHA / MOTOR / BIT INFORMATION:

BHA: 3 **HOLE SIZE:** 6.125 in **SECTION TYPE:** Lateral 1 **SURVEY TYPE:** HEL LWD
MANFCT.: WFT **STABILIZER:** No **SERIAL#:** 475-41092 **MODEL:** 6/7 7.0 Stg. **LOBE CFG.:** 6/7
SETTING: 1.5 ° **KICKPAD:** No **SIZE:** 4 3/4" (121mm) **MTR HRS THIS DAY:** 22.91666667 **MTR HRS TO DATE:** 45.75
MANFCT: Smith **BIT TYPE:** Smith 5x16s **TYPE:** SDi513 **NOZZLES:** 0.982 in² TFA
IADC BIT GRADE: 2 / 1 / WT / N / X / I / NO / TD

PUMP PARAMETERS

PRESSURE ON BTM: 2900 **PRESSURE OFF BTM:** 2200 **TOTAL FLOW RATE:** 299.02 gal/min
PUMP 1: TYPE: 1600 **EFF.:** 97.0% **SPM:** 72.00 **LINER:** 6.00 in **STROKE VOL.:** 4.2816 gal/stk
PUMP 2: TYPE: 1600 **EFF.:** 97.0% **SPM:** 0.00 **LINER:** 0.00 in **STROKE VOL.:** 0.0000 gal/stk
PUMP 3: TYPE: **EFF.:** 100.0% **SPM:** 0.00 **LINER:** 0.00 in **STROKE VOL.:** 0.0000 gal/stk

MUD RECORD

MUD TYPE: Gelchem **VISC:** 38 sec/qt **WTR LOSS:** 6.6 cc/30min **PV:** 10 cP **YP:** 14 lb/100 ft² **pH:** 8.6
DENSITY: 9.8 lb/gal **GEL 0/10:** 3.00 lb/100 ft² **SAND:** 0.25 **SOLIDS:** 3.9 **OIL:** 0 **TEMP:** 188 °F
LIQUID BASE: Water **LIQUID RATE:** 0 gal/min **GAS TYPE:** **GAS RATE:** 0 cu ft/min

COMMENTS:

Drill F/ 9194' T/ 9279' Breaking up slides to twice per stand to try and get INC back up.
 Circulate hi vis sweep bottoms up. Saw 300% increase in cuttings across shaker when sweep returned.
 Drill F/ 9279' T/ 11,012'

CUSTOMER SIGNATURE:

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Daily Activity Report

Drilling Services
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Day 10 - 2012/10/29

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

DIR Supervisor: Brian Trani, Steven Bumgarner

Company Man: James Nunnelee

Other: Eric Dearmen, Stephen Gray

GROUND ELEV: 4856 ft

KB ELEV: 4872 ft

START DEPTH: 11012.0 ft

END DEPTH: 11479.0 ft

PROGRESS: 467.0 ft

AVG. ROP.: 96.7 ft/hr

DAILY COST: USD\$22100.00

PREVIOUS COST: USD\$156160.00

TOTAL COST: USD\$178260.00

WORK STATUS: Operating

(All units are imperial.)

TIME	DAILY ACTIVITY	HRS	DPTH	BHA	TIME	DAILY ACTIVITY	HRS	DPTH	BHA
00:00-00:40	Rotating With Motor	0.67	11073	3	05:00-05:20	Orienting With Motor	0.33	11342	3
00:40-00:45	Circ & Accumulate Surveys	0.08	11073	3	05:20-05:45	Rotating With Motor	0.42	11414	3
00:45-01:20	Orienting With Motor	0.58	11098	3	05:45-05:50	Circ & Accumulate Surveys	0.08	11414	3
01:20-01:40	Rotating With Motor	0.33	11158	3	05:50-06:10	Rotating With Motor - TD	0.33	11479	3
01:40-01:45	Circ & Accumulate Surveys	0.08	11158	3	06:10-06:15	Circ & Accumulate Surveys	0.08	11479	3
01:45-02:45	Orienting With Motor	1.00	11183	3	06:15-08:20	Circulating - Circ. 2 Btms Up	2.08	11479	3
02:45-03:00	Rotating With Motor	0.25	11243	3	08:20-09:30	Circulating	1.17	11479	3
03:00-03:55	Circ & Condition Hole	0.92	11243	3	09:30-11:00	POOH To Run Casing - Trip To Shoe	1.50	11479	3
03:55-04:00	Circ & Accumulate Surveys	0.08	11243	3	11:00-14:15	Wait On Orders	3.25	11479	3
04:00-04:30	Orienting With Motor	0.50	11268	3	14:15-17:30	POOH To Run Casing	3.25	11479	3
04:30-04:55	Rotating With Motor	0.42	11328	3	17:30-18:30	Lay Down Directional Tools	1.00	11479	3
04:55-05:00	Circ & Accumulate Surveys	0.08	11328	3	18:30-23:30	Ream Hole - Reamer Run EOW	5.00	11479	3

TIME SUMMARY (hrs):

MOTOR DRILL: 4.83	ORIENTING HRS: 2.42	ROTARY DRILL: 0.00	ROTARY TORQUE: 14000 ft-lb	STRING WEIGHT: 135000 lbs
TIME DRILL: 0.00	ROTATING HRS: 2.42	MOTOR HRS: 14.50	WOB SLIDING (HI): 35000 lbf	WOB ROTATE (HI): 25000 lbf
MOTOR REAM: 5.00		TRIP: 4.75	WOB SLIDING (LO): 20000 lbf	WOB ROTATE (LO): 18000 lbf
CIRC: 4.67	ROTARY DRILL: 0.00	OTHER: 4.25	RPM (ROTARY): 40-55 rpm	DRAG UP: 75000 lbf
MOTOR HRS: 14.50	DRILL HRS: 4.83	TOTAL HRS: 23.50	RPM (MOTOR): 240 rpm	DRAG DN: 35000 lbf

DRILLING PARAMETERS:

BHA / MOTOR / BIT INFORMATION:

BHA: 3	HOLE SIZE: 6.125 in	SECTION TYPE: Lateral 1	SURVEY TYPE: HEL LWD
MANFCT.: WFT	STABILIZER: No	SERIAL#: 475-41092	MODEL: 6/7 7.0 Stg.
SETTING: 1.5 °	KICKPAD: No	SIZE: 4 3/4" (121mm)	LOBE CFG.: 6/7
MANFCT: Smith	BIT TYPE: Smith 5x16s	TYPE: SDi513	MTR HRS THIS DAY: 14.5
IADC BIT GRADE: 2 / 1 / WT / N / X / I / NO / TD			MTR HRS TO DATE: 60.25
			NOZZLES: 0.982 in² TFA

PUMP PARAMETERS

PRESSURE ON BTM: 3600	PRESSURE OFF BTM: 3000	TOTAL FLOW RATE: 299.02 gal/min
PUMP 1: TYPE: 1600	EFF.: 97.0%	SPM: 72.00
PUMP 2: TYPE: 1600	EFF.: 97.0%	SPM: 0.00
PUMP 3: TYPE:	EFF.: 100.0%	SPM: 0.00
	LINER: 6.00 in	STROKE VOL.: 4.2816 gal/stk
	LINER: 6.00 in	STROKE VOL.: 4.2816 gal/stk
	LINER: 0.00 in	STROKE VOL.: 0.0000 gal/stk

MUD RECORD

MUD TYPE: Gelchem	VISC: 40 sec/qt	WTR LOSS: 5.8 cc/30min	PV: 10 cP	YP: 17 lb/100 ft²	pH: 8.2
DENSITY: 10 lb/gal	GEL 0/10: 4.00 lb/100 ft²	SAND: 0.001	SOLIDS: 5	OIL: 0	TEMP: 212 °F
LIQUID BASE: Water		LIQUID RATE: 0 gal/min	GAS TYPE:		GAS RATE: 0 cu ft/min

COMMENTS:

Drill F/11,012' T/11,479' TD

Backreaming the entire stand, every stand, and using 2%-3% drill-n-slide made this lateral, unlike others, much easier to manage when sliding past 9,500 MD to TD.

Typically we are slowed down to 10-35 ft/hr sliding in the last 1000ft. This well, however, we were able to slide between 70-120 ft/hr for the majority



Daily Activity Report

Day 10 - 2012/10/29

Drilling Services
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of the lateral, once tool face obtained.

Orienting toolfaces took much less time.

The use of extremely high vis sweeps, in conjunction with circulating and reciprocating the pipe one bottoms up, re-established ability to slide 80-90 ft/hr, while holding toolfaces all the way to TD.

TD aprox 7ft left, 1 ft low and 26 ft North of setback.

CUSTOMER SIGNATURE: _____



BHA REPORTS

**Weatherford®**

BHA Report

Drilling Services
v4.2.2674

BHA 1 - Build & Hold Section

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: Duaine Bell, James Nunnelee

DIR Supervisor: Brian Trani, Steven Bumgarner

MWD Supervisor: Denny Palmer

BHA SURVEY TYPE: Positive Pulse MWD

HOLE SIZE: 8.75 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	Hughes 5X18s	Hughes	7142425	DP405 / 1.24TFA	6.75	0	0		4 1/2" REG Pin	1.00 ft	1.00 ft
1	Drilling Motor	Weatherford	675-3611	7/8 5.0 Stg	6.75	0	0	4 1/2" REG Box	4 1/2" IF Box	27.87 ft	28.87 ft
1	UBHO Sub	Weatherford	33444	UBHO	6.75	3.125	0	4 1/2" IF Pin	4 1/2" IF Box	3.56 ft	32.43 ft
1	6 3/4 Slick NMDC	Weatherford	675-33964	Slick Collar	6.84	3.25	0	4 1/2" IF Pin	4 1/2" IF Box	30.28 ft	62.71 ft
1	6-3/4 Flex NMDC	Weatherford	675-37416	Flex Collar	6.82	3.25	0	4 1/2" IF Pin	4 1/2" IF Box	31.09 ft	93.80 ft
1	4-1/2IFpin,4XT39bnd	Weatherford	51026	Crossover	6.9	2.25	0	4 1/2" IF Pin	4" XT39 Box	3.99 ft	97.79 ft
45	4" HWDP 15 StandRig	Rig		HeavyWeight DP4	2.75	0		XT-39 Pin	XT-39 Box	1400.78	1498.57 ft

(O.D. units are in; I.D. units are in; F.Neck units are ft)

GENERAL INFORMATION

DATES RUN: 2012/10/20 TO 2012/10/22
DEPTH IN: 896.00 ft **ANGLE IN:** 0.26 °
DEPTH OUT: 6400.00 ft **ANGLE OUT:** 1.78 °
DRILL HRS: 31.33 **BUILD:** 1.52 °
ORIENTING HRS: 9.25 **HOLE MADE:** 5504.00 ft
ROTATING HRS: 22.08 **AVG R.O.P.:** 175.68 ft/hr

MOTOR INFORMATION

MANFCT. Weatherford **SETTING:** 1.50 °
SERIAL #: 675-3611 **KICK PAD:** No
MODEL: 7/8 5.0 Stg **STABILIZER:** No
LOBE CFG: 7/8 **MOTOR HRS:** 40.33
BIT TO BEND: 6.18

PUMP INFORMATION

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	97.0%	97.0%	100.0%
S.P.M.:	70	70	0
STROKE VOLUME:	4.2816 gal/stk	4.2816 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	581.43506 gal/min		
PUMP PRESSURE:	OFF BTM: 0 psi	ON BTM: 0 psi	

MUD INFORMATION

MUD TYPE: Polymer **LIQUID BASE:** Water
DENSITY: 9 lb/gal **TEMP:** 113 °F
VISCOSITY: 34 sec/qt **pH:** 8.4
WTR LOSS: 0 cc/30min **SAND:** 0.5 **LIQUID RATE:** 0 gal/min
PLAST VISC: 7 cP **SOLIDS:** 1.3 **GAS TYPE:**
YIELD PT: 11 lb/100 ft² **OIL:** 0 **GAS RATE:** 0 cu ft/min

BIT INFORMATION

MANFCT: Hughes **TYPE:** DP405 / 1.24TFA **ADC BIT GRADE:** 1 / 1 / WT / A / X / I / PN / TD
NOZZLES: 1.245 in² TFA

REASON FOR BHA CHANGE

POOH to change Bit and Motor for Curve.

FORMATION CHARACTERISTICS

We will re-evaluate the situation on the next pad and see if it is an anomaly associated with this one particular area. All of these straighthole/back nudges have been either to the NE or SE, so it is possible that we are seeing a problem with the local geology when drilling to the North.

MWD COMMENTS

Great detection with very few instances of needing to re-survey. Toolfaces updated consistently while sliding.

**BHA 1 - Build & Hold Section**

SIDETRACKING PROCEDURE COMMENTS

N/A

RUN SUMMARY

At aprox. 1600 MD drillstring started hopping. Autodriller had been set up with new parameters taken from other xtreme rigs that had been having similar problems, but with no luck preventing hop at ROPs greater than 200 ft/hr.

At aprox. 2800 MD slowing the rotary to 25RPM mitigated hopping and ROP was increase from 200 to 450 ft/hr. By 3200 MD we were able to resume normal rotary speeds, 50-60 RPM, and hopping was completely gone.

**Weatherford**

BHA Report

BHA 2 - Curve Section

Drilling Services
v4.2.2674**FILE #:** 4027385**JOB TYPE:** Horizontal**RIG & NO:** Xtreme 23**WELL NAME:** Palyo 13N-11HZ**COMPANY:** Anadarko Petroleum Corporation**SURFACE LOCATION:** Weld**SERVICE CO.:** Weatherford Directional**SURVEY TYPE:** HEL LWD**FIELD / LOCATION:** Wattenburg / CO / USA**Company Man:** Duaine Bell, James Nunnelee**DIR Supervisor:** Brian Trani, Steven Bumgarner**MWD Supervisor:** Denny Palmer**BHA SURVEY TYPE:** Positive Pulse MWD**HOLE SIZE:** 8.75 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	Security 5x18's	Security	11914293	FXD55M	8.75	0	0		4 1/2" REG Pin	1.00 ft	1.00 ft
1	Drilling Motor	WFT	675-3996	7/8 5.0 Stg.	6.75	0	0	4 1/2" REG Box	4 1/2" IF Box	27.89 ft	28.89 ft
1	UBHO Sub	Weatherford	33444	UBHO	6.75	3.125	0	4 1/2" IF Pin	4 1/2" IF Box	3.56 ft	32.45 ft
1	6 3/4 Slick NMDC	Weatherford	675-33964	Slick Collar	6.84	3.25	0	4 1/2" IF Pin	4 1/2" IF Box	30.28 ft	62.73 ft
1	6-3/4 Flex NMDC	Weatherford	675-37416	Flex Collar	6.82	3.25	0	4 1/2" IF Pin	4 1/2" IF Box	31.09 ft	93.82 ft
1	4-1/2 IF pin, 4XT39 Box	Weatherford	51026	Crossover	6.9	2.25	0	4 1/2" IF Pin	4" XT39 Box	3.99 ft	97.81 ft
22	4" DP 11 Stands	Rig	Push Pipe	4" XT-39	4	2	0	4 XT-39 Pin	4 XT-39 Box	938.24 ft	1036.05 ft
45	4" HWDP 15 Stands	Rig	Rig	HeavyWeight DP4	2.75	0		XT-39 Pin	XT-39 Box	1399.33	2435.38 ft

(O.D. units are in; I.D. units are in; F.Neck units are ft)

GENERAL INFORMATION

DATES RUN: 2012/10/22 TO 2012/10/25
DEPTH IN: 6400.00 ft **ANGLE IN:** 1.19 °
DEPTH OUT: 7325.00 ft **ANGLE OUT:** 80.95 °
DRILL HRS: 30.58 **BUILD:** 79.76 °
ORIENTING HRS: 27.08 **HOLE MADE:** 925.00 ft
ROTATING HRS: 3.50 **AVG R.O.P.:** 30.25 ft/hr

MOTOR INFORMATION

MANFCT. WFT **SETTING:** 2.38 °
SERIAL #: 675-3996 **KICK PAD:** No
MODEL: 7/8 5.0 Stg. **STABILIZER:** No
LOBE CFG: 7/8 **MOTOR HRS:** 36.33
BIT TO BEND: 6.22

PUMP INFORMATION

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	97.0%	97.0%	100.0%
S.P.M.:	70	70	0
STROKE VOLUME:	4.2816 gal/stk	4.2816 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	581.43506 gal/min		
PUMP PRESSURE:	OFF BTM: 2500 psi	ON BTM: 3000 psi	

MUD INFORMATION

MUD TYPE: Gelchem **LIQUID BASE:** Water
DENSITY: 10.1 lb/gal **TEMP:** 168 °F
VISCOSITY: 41 sec/qt **pH:** 8.6
WTR LOSS: 6.5 cc/30min **SAND:** 0.25 **LIQUID RATE:** 0 gal/min
PLAST VISC: 16 cP **SOLIDS:** 3.1 **GAS TYPE:**
YIELD PT: 15 lb/100 ft² **OIL:** 0 **GAS RATE:** 0 cu ft/min

BIT INFORMATION

MANFCT: Security **TYPE:** FXD55M **IADC BIT GRADE:** 1 / 1 / WT / G / X / I / NO / TD
NOZZLES: 1.245 in² TFA

REASON FOR BHA CHANGE

Casing depth reached.

FORMATION CHARACTERISTICS

Sharon springs was reported by mud loggers to come in 100 ft earlier than expected. This also coincided with our lowest motor output in the curve where we saw an 8.9 deg./hund motor yield.

MWD COMMENTS

MWD signal was great and hands did an excellent job of maintaining detection even through severe stack and stalling issues.

**BHA 2 - Curve Section**

SIDETRACKING PROCEDURE COMMENTS

N/A

RUN SUMMARY

Curve was kicked off 12 feet early, rather than 50, to avoid getting too far ahead of the line and risk eating up pay zone.

The curve started out drilling quickly at 120 ft/hr and assy. delivered needed build rates easily. Aprox 200ft into curve motor started stalling and ROP was slowed from 100 ft/hr to around 60 ft/hr. This was around a 60ft. throw fault as indicated by seismic data. At nearly the same time that we began having difficulty sliding the assy. turned right 5 degrees in azm. A short trip 300ft into curve helped us get back to sliding at 80 ft/hr. 500 ft into the curve, however, we were back to stalling the motor and had a conference with Anadarko. The motor did not show signs of being weak; reactive torque was very strong, but weight continued to stack and then fall off causing stalls or differential spiking that destroyed tool faces. After discussing problem with customer, we brought lubes up to 2% and problem went away. The last 150ft of curve reqd. more lube sweeps mixed with walnut in order to slide without stack and stall issues. ROP slowed to 20-30 ft/hr.

We started rotating portions of each joint after seeing the second survey into the curve. We continued to back off, rotating 15 ft per joint, in order to bring us back in section after our initial launch ahead of the curve early on.

As with many curves almost all slides were up and to the left to keep azm from drifting right. This trend continued to TD of the curve.

We were asked to bring the TVD at landing up 10ft after having already built over 60 degrees. When we told customer that it would require 16 degree doglegs to do so, they asked us to just do our best at bringing TVD up and try to bring it up 5 feet higher if possible. In doing this we had one rogue dogleg of 16 deg/hund.at 7200 MD. This was the only dogleg higher than 12 in the curve, except for the initial 13 created by our first slide in the curve, but necessitated running DQX casing at the base of the curve.

Curve was landed 3 ft high of the original target and 2 feet low of new target. We landed 37 feet down-range from the original proposal.

**Weatherford®**

BHA Report

Drilling Services
v4.2.2674

BHA 3 - Lateral 1 Section

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: James Nunnelee

DIR Supervisor: Brian Trani, Jacob Hofer

MWD Supervisor: James Witherspoon

BHA SURVEY TYPE: HEL LWD

HOLE SIZE: 6.125 in

QTY	COMPONENT	MANFCT.	SERIAL #	MODEL	O.D.	I.D.	F.N.	BOT. CONN.	TOP CONN.	LEN.	C.LEN.
1	Smith 5x16s	Smith	JE6295	SDi513	6.125	0	0		3 1/2" REG Pin	0.75 ft	0.75 ft
1	Drilling Motor	WFT	475-41092	6/7 7.0 Stg.	5	0	0	3 1/2" REG Box	3 1/2" IF Box	28.25 ft	29.00 ft
1	Slide Reamer	Dura Drill	DM9332-02	3Blade-6Rolle	4.8125	2.25	0	3 1/2" IF Pin	3 1/2" IF Box	5.95 ft	34.95 ft
1	4-3/4 Gamma	WFT	NW21990	SAGR Azimuthal	4.75	2.44	0	3 1/2" IF Pin	3 1/2" IF Box	14.20 ft	49.15 ft
1	4-3/4 Split IDS Svy	WFT	NW21996	Directional	4.75	3.25	0	3 1/2" IF Pin	3 1/2" IF Box	12.07 ft	61.22 ft
1	4-3/4 HEL/LWD	WFT	NW21991	LWD Controller	4.75	2.75	0	3 1/2" IF Pin	3 1/2" IF Box	14.33 ft	75.55 ft
1	Non Mag Stabilizer	WFT	DR9466	5-7/8, 3 Blade	4.9375	2.75	0	3 1/2" IF Pin	3 1/2" IF Box	4.88 ft	80.43 ft
1	4-3/4 Slick NMDC	Weatherford	46135	Slick Collar	4.57	2.6875	0	3 1/2" IF	3 1/2" IF	28.01 ft	108.44 ft
1	3 1/2 IF Pin - XT-39	Weatherford	DR 9831	X/O Sub	5.2	2.562	0	3 1/2" IF Pin	XT-39 Box	3.16 ft	111.60 ft
112	4" DP 56 Stands	Rig	Rig	Pushpipe XT-39, 4		3.5	0	XT-39 Pin	XT-39 Box	4781.37	4892.97 ft
45	4" HWDP 15 Stand	Rig	Rig	HeavyWeight DP4		2.75	0	XT-39 Pin	XT-39 Box	1399.33	6292.30 ft

(O.D. units are in; I.D. units are in; F.Neck units are ft)

GENERAL INFORMATION

DATES RUN: 2012/10/26 TO 2012/10/29
 DEPTH IN: 7325.00 ft ANGLE IN: 83.56 °
 DEPTH OUT: 11479.00 ft ANGLE OUT: 89.32 °
 DRILL HRS: 42.00 BUILD: 5.76 °
 ORIENTING HRS: 16.83 HOLE MADE: 4154.00 ft
 ROTATING HRS: 25.17 AVG R.O.P.: 98.90 ft/hr

MOTOR INFORMATION

MANFCT. WFT SETTING: 1.50 °
 SERIAL #: 475-41092 KICK PAD: No
 MODEL: 6/7 7.0 Stg. STABILIZER: No
 LOBE CFG: 6/7 MOTOR HRS: 60.25
 BIT TO BEND: 6.12

PUMP INFORMATION

PUMPS	PUMP 1	PUMP 2	PUMP 3
EFFICIENCY:	97.0%	97.0%	100.0%
S.P.M.:	72	0	0
STROKE VOLUME:	4.2816 gal/stk	4.2816 gal/stk	0.0 gal/stk
TOTAL FLOW RATE:	299.02375 gal/min		
PUMP PRESSURE:	OFF BTM: 3000 psi	ON BTM: 3600 psi	

MUD INFORMATION

MUD TYPE: Gelchem LIQUID BASE: Water
 DENSITY: 10 lb/gal TEMP: 212 °F
 VISCOSITY: 40 sec/qt pH: 8.2
 WTR LOSS: 5.8 cc/30min SAND: 0.001 LIQUID RATE: 0 gal/min
 PLAST VISC: 10 cP SOLIDS: 5 GAS TYPE:
 YIELD PT: 17 lb/100 ft² OIL: 0 GAS RATE: 0 cu ft/min

BIT INFORMATION

MANFCT: Smith TYPE: SDi513 IADC BIT GRADE: 2 / 1 / WT / N / X / I / NO / TD
 NOZZLES: 0.982 in² TFA

REASON FOR BHA CHANGE

Lateral assembly.

FORMATION CHARACTERISTICS

We saw more drop trend than usual when maneuvering through marl. We saw more build than usual in and out of the chalk.

**BHA 3 - Lateral 1 Section**

—MWD COMMENTS

We were picking up 4.75 LWD tools (BHA 3) for the lateral section of Palyo 13N-11HZ at ~0600 hrs. After assembling the tool string consisting of the HEL NW1989, Split IDS NW21994, and SAGR NW21990 programming began via the RFD cable currently in use running between the dog house and the directional trailer. The tool string components were programmed normally with no issues until the final step of programming the Controller, located in the HEL tool, when a Memory Error occurred. Troubleshooting began on the controller error and the Weatherford LWD coordinators were informed. The decision was made to lay down the Primary HEL NW1989 and pick up the Secondary HEL NW21991.

Once the Secondary HEL tool (NW21991) was made up, programming began with the same result. The controller again displayed the same Memory Error. The Primary HEL tool (NW1989), now on the deck in front of the Directional shack, was then connected to for further troubleshooting. The Primary HEL tool programmed normal with no controller error. New communication cables were ran to the rig floor as they were now thought to be the issue. The new cables did not solve the issue. The Secondary HEL tool (NW21991) was laid down for more troubleshooting. When the Secondary HEL was connected to on the deck, the tool programmed normally with no errors. The decision was made to program and initialize the Secondary HEL tool (NW21991) on the deck and the IDS (NW21994) and SAGR (NW21990), still made up on the floor, separately, make them up in the tool string, and shallow hole test.

While performing the shallow hole test, an new error with the IDS occurred with the HEL and SAGR working correctly. A computer and new communication cable were brought to the rig floor for troubleshooting. A corrupted IDS calibration file was found, and the decision was made to lay the Primary IDS (NW21994) down and pick up the Secondary IDS (NW21996). How the file became corrupt is still being investigated by the coordinators and the field engineers.

The Secondary IDS was made up into the tool string and programmed. The tools programmed normally with no errors and a successful shallow hole test was conducted with the final tool string consisting of the HEL NW21991, Split IDS NW21996, and SAGR NW21990.

—SIDETRACKING PROCEDURE COMMENTS

N/A

—RUN SUMMARY

Backreaming the entire stand, every stand, and using 2%-3% drill-n-slide made this lateral, unlike others, much easier to manage when sliding past 9,500 MD to TD.

Typically we are slowed down to 10-35 ft/hr sliding in the last 1000ft. This well, however, we were able to slide between 70-120 ft/hr for the majority of the lateral, once tool face obtained.

Orienting toolfaces took much less time.

The use of extremely high vis sweeps, in conjunction with circulating and reciprocating the pipe one bottoms up, re-established ability to slide 80-90 ft/hr, while holding toolfaces all the way to TD.



MOTOR REPORTS

**Weatherford®**

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 1 - Build & Hold Section, Motor #675-3611

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: Duaine Bell, James Nunnelee
 DIR Supervisor: Brian Trani, Steven Bumgarner
 MWD Supervisor: Denny Palmer

BHA SURVEY TYPE: Positive Pulse MWD

HOLE SIZE: 8.75 in

GENERAL INFORMATION:

BHA #: 1
 DATE IN: 2012/10/20
 DATE OUT: 2012/10/22
 ANGLE IN: 0.26 °
 ANGLE OUT: 1.78 °
 ORIENTING HRS: 9.25
 START DEPTH: 896.00 ft
 END DEPTH: 6400.00 ft
 HOLE MADE: 5504.00 ft
 AVG ROP: 175.68 ft/hr
 ROTATING HRS: 22.08

MOTOR INFORMATION:

MANFCT: Weatherford
 SERIAL #: 675-3611
 MODEL: 7/8 5.0 Stg
 LOBE: 7/8
 SETTING: 1.50 °
 BIT TO BEND: 6.18 ft
 KICKPAD: No
 STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: DP405 / 1.24TFA
 BIT PRESS DROP: 0.00 psi
 MTR PRESS DROP: 0.00 psi
 IADC BIT GRADE: 1 / 1 / WT / A / X / I / PN / TD
 TOTAL FLOW RATE: 581.44 gal/min
 NOZZLES: 1.245 in² TFA
 PUMP PRESS: (OFF) 0.00 psi
 (ON) 0.00 psi

MUD INFORMATION:

MUD TYPE: Polymer
 DENSITY: 9 lb/gal
 SAND: 0.500
 SOLIDS: 1.300
 OIL: 0.000
 TEMP: 113 °F
 LIQUID BASE: Water
 VISCOSITY: 34 sec/qt
 WATER LOSS: 0.00 cc/30min
 PLASTIC VISC: 7.0 cP
 YIELD POINT: 11.0 lb/100 ft²
 pH: 8.4
 LIQUID RATE: 0.00 gal/min
 GAS TYPE:
 GAS RATE: 0.00 cu ft/min
 (All units are imperial.)

TIME INFORMATION:

CIRCULATING HOURS: 9.00
 REAMING HOURS: 0.00
 TIME DRILL HOURS: 0.00
 MOTOR DRILL HOURS: 31.33
 MOTOR HOURS THIS RUN: 40.33
 PREVIOUS HOURS: 0.00
 TOTAL MOTOR HOURS: 40.33
 TOTAL BRT HOURS: 40.33

MOTOR EVALUATION COMMENTS:

Drained well. Bearing play normal. Rubber chunk found in one bit nozzle.

REASON FOR BHA CHANGE:

POOH to change Bit and Motor for Curve.

COMMENTS FROM LAST DAY RAN:

Drill F/ 4,828' T/6,400' Circulate & POOH for curve assembly. Change bit & motor.

From aprox. 5000 MD to 6000 MD we saw constant differential spikes both rotating and sliding. From 6000 to TD of straight-hole at 6400 MD, however, differential spiking went away, leading us to believe it was formation related.



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Motor / RSS Evaluation Report

Drilling Services
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BHA 1 - Build & Hold Section, Motor #675-3611

POOH 12 ft before KOP. In the majority of cases kicking off 50ft early has only led to being too far ahead of curve early on. We agreed with company rep. that we would kick off closer to proposal this well.

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Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 2 - Curve Section, Motor #675-3996

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: Duaine Bell, James Nunnelee

DIR Supervisor: Brian Trani, Steven Bumgarner

MWD Supervisor: Denny Palmer

BHA SURVEY TYPE: Positive Pulse MWD

HOLE SIZE: 8.75 in

GENERAL INFORMATION:

BHA #: 2
DATE IN: 2012/10/22
DATE OUT: 2012/10/25
ANGLE IN: 1.19 °
ANGLE OUT: 80.95 °
ORIENTING HRS: 27.08
START DEPTH: 6400.00 ft
END DEPTH: 7325.00 ft
HOLE MADE: 925.00 ft
AVG ROP: 30.25 ft/hr
ROTATING HRS: 3.50

MOTOR INFORMATION:

MANFCT: WFT
SERIAL #: 675-3996
MODEL: 7/8 5.0 Stg.
LOBE: 7/8
SETTING: 2.38 °
BIT TO BEND: 6.22 ft
KICKPAD: No
STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: FXD55M
BIT PRESS DROP: 0.00 psi
MTR PRESS DROP: 0.00 psi
IADC BIT GRADE: 1 / 1 / WT / G / X / I / NO / TD
TOTAL FLOW RATE: 581.44 gal/min
NOZZLES: 1.245 in² TFA
PUMP PRESS: (OFF) 2500.00 psi
(ON) 3000.00 psi

MUD INFORMATION:

MUD TYPE: Gelchem
DENSITY: 10 lb/gal
SAND: 0.250
SOLIDS: 3.100
OIL: 0.000
TEMP: 168 °F
LIQUID BASE: Water
VISCOSITY: 41 sec/qt
WATER LOSS: 6.50 cc/30min
PLASTIC VISC: 16.0 cP
YIELD POINT: 15.0 lb/100 ft²
pH: 8.6
LIQUID RATE: 0.00 gal/min
GAS TYPE:
GAS RATE: 0.00 cu ft/min
 (All units are imperial.)

TIME INFORMATION:

CIRCULATING HOURS: 5.75
REAMING HOURS: 0.00
TIME DRILL HOURS: 0.00
MOTOR DRILL HOURS: 30.58
MOTOR HOURS THIS RUN: 36.33
PREVIOUS HOURS: 0.00
TOTAL MOTOR HOURS: 36.33
TOTAL BRT HOURS: 36.33

MOTOR EVALUATION COMMENTS:

Stalled easily and frequently. ROP was nearly cut in half on this curve due to this. The issue was mitigated by pumping massive amounts of lubricants, not normally needed in the curve. Motor checked out ok on surface, drained strongly, and had normal bearing play.

REASON FOR BHA CHANGE:

Casing depth reached.

COMMENTS FROM LAST DAY RAN:

POOH to run 7". L/D tools. Run 7" casing. Cement.

Taget change sent 17:15PM. 6925 TVD @ 0 VS

**Weatherford®**

Motor / RSS Evaluation Report

Drilling Services
v4.2.2674

BHA 3 - Lateral 1 Section, Motor #475-41092

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: James Nunnelee

DIR Supervisor: Brian Trani, Jacob Hofer

MWD Supervisor: James Witherspoon

BHA SURVEY TYPE: HEL LWD

HOLE SIZE: 6.125 in

GENERAL INFORMATION:

BHA #: 3
DATE IN: 2012/10/26
DATE OUT: 2012/10/29
ANGLE IN: 83.56 °
ANGLE OUT: 89.32 °
ORIENTING HRS: 16.83

START DEPTH: 7325.00 ft
END DEPTH: 11479.00 ft
HOLE MADE: 4154.00 ft
AVG ROP: 98.90 ft/hr
ROTATING HRS: 25.17

MOTOR INFORMATION:

MANFCT: WFT
SERIAL #: 475-41092
MODEL: 6/7 7.0 Stg.
LOBE: 6/7
SETTING: 1.50 °

BIT TO BEND: 6.12 ft
KICKPAD: No
STABILIZER: No

DRILLING INFORMATION:

BIT TYPE: SDi513
BIT PRESS DROP: 0.00 psi
MTR PRESS DROP: 0.00 psi

IADC BIT GRADE: 2 / 1 / WT / N / X / I / NO / TD
TOTAL FLOW RATE: 299.02 gal/min
NOZZLES: 0.982 in² TFA

PUMP PRESS: (OFF) 3000.00 psi
(ON) 3600.00 psi

MUD INFORMATION:

MUD TYPE: Gelchem
DENSITY: 10 lb/gal
SAND: 0.001
SOLIDS: 5.000
OIL: 0.000
TEMP: 212 °F

LIQUID BASE: Water
VISCOSITY: 40 sec/qt
WATER LOSS: 5.80 cc/30min
PLASTIC VISC: 10.0 cP
YIELD POINT: 17.0 lb/100 ft²
pH: 8.2

LIQUID RATE: 0.00 gal/min
GAS TYPE:
GAS RATE: 0.00 cu ft/min

(All units are imperial.)

TIME INFORMATION:

CIRCULATING HOURS: 13.25
REAMING HOURS: 5.00
TIME DRILL HOURS: 0.00
MOTOR DRILL HOURS: 42.00

MOTOR HOURS THIS RUN: 60.25
PREVIOUS HOURS: 0.00

TOTAL MOTOR HOURS: 60.25
TOTAL BRT HOURS: 60.25

MOTOR EVALUATION COMMENTS:

Excellent performance. Few stalls.

REASON FOR BHA CHANGE:

Lateral assembly.

COMMENTS FROM LAST DAY RAN:

Drill F/11,012' T/11,479' TD

Backreaming the entire stand, every stand, and using 2%-3% drill-n-slide made this lateral, unlike others, much easier to manage when sliding past 9,500 MD to TD.

**BHA 3 - Lateral 1 Section, Motor #475-41092**

Typically we are slowed down to 10-35 ft/hr sliding in the last 1000ft. This well, however, we were able to slide between 70-120 ft/hr for the majority of the lateral, once tool face obtained.

Orienting toolfaces took much less time.

The use of extremely high vis sweeps, in conjunction with circulating and reciprocating the pipe one bottoms up, re-established ability to slide 80-90 ft/hr, while holding toolfaces all the way to TD.

TD aprox 7ft left, 1 ft low and 26 ft North of setback.



SLIDE REPORT



Slide Sheet Report

Drilling Services

v4.2.2674

BHA 1 - 2012/10/20 TO 2012/10/22

FILE #: 4027385
JOB TYPE: Horizontal
RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ
COMPANY: Anadarko Petroleum Corporation
SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional
SURVEY TYPE: HEL LWD
FIELD / LOCATION: Wattenburg / CO / USA

Company Man: Duaine Bell, James Nunnelee
DIR Supervisor: Brian Trani, Steven Bumgarner
MWD Supervisor: Denny Palmer

BHA NO: 1	DATES RUN: 2012/10/20 TO 2012/10/22	SECTION: Build & Ho	TOOLFACE OFFSET: 323.1 °	SURVEY OFFSET: 60 ft
MOTOR SETTING: 1.50 °	KICKPAD: No	STABILIZER: No	MODEL: 7/8 5.0 Stg	SERIAL NO: 675-3611
			BHA SURVEY TYPE: Positive Pulse MWD	

(Distances are shown in feet.)

BIT		SURVEY				----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
896.00	0.00	836.00	0.26	275.80	ROT	896.00	896.00	0.00	896.00	896.00	0.00	0.00	0.00	0.00	
896.00	228.00	836.00	0.28	275.00	ROT	896.00	896.00	0.00	896.00	1124.00	228.00	0.00	0.00	0.00	
1124.00	94.00	1064.00	0.22	5.33	330M	1124.00	1144.00	20.00	1144.00	1218.00	74.00	0.00	0.00	-0.03	
1218.00	93.00	1158.00	2.26	8.38	310M	1218.00	1238.00	20.00	1238.00	1311.00	73.00	20.00	0.10	2.17	
1311.00	94.00	1251.00	4.14	347.31	290M	1311.00	1329.00	18.00	1329.00	1405.00	76.00	20.00	0.09	2.02	
1405.00	93.00	1345.00	6.14	337.63	45L	1405.00	1421.00	16.00	1421.00	1498.00	77.00	18.00	0.11	2.13	
1498.00	171.00	1438.00	7.76	325.09	HSR	1498.00	1508.00	10.00	1508.00	1669.00	161.00	16.00	0.10	1.74	
1669.00	170.00	1609.00	9.50	324.65	110R	1669.00	1677.00	8.00	1677.00	1839.00	162.00	10.00	0.17	1.02	
1839.00	256.00	1779.00	8.87	331.09	90L	1839.00	1844.00	5.00	1844.00	2095.00	251.00	8.00	-0.08	-0.37	
2095.00	85.00	2035.00	7.79	325.58	30R	2095.00	2107.00	12.00	2107.00	2180.00	73.00	5.00	-0.22	-0.42	
2180.00	85.00	2120.00	7.66	332.38	10L	2180.00	2200.00	20.00	2200.00	2265.00	65.00	12.00	-0.01	-0.15	
2265.00	342.00	2205.00	9.06	327.17	10R	2265.00	2280.00	15.00	2280.00	2607.00	327.00	20.00	0.07	1.65	
2607.00	256.00	2547.00	8.05	323.73	30R	2607.00	2627.00	20.00	2627.00	2863.00	236.00	15.00	-0.07	-0.30	
2863.00	86.00	2803.00	8.06	324.88	20R	2863.00	2883.00	20.00	2883.00	2949.00	66.00	20.00	0.00	0.00	
2949.00	170.00	2889.00	9.16	330.34	HS	2949.00	2971.00	22.00	2971.00	3119.00	148.00	20.00	0.05	1.28	
3119.00	256.00	3059.00	10.86	333.28	70L	3119.00	3127.00	8.00	3127.00	3375.00	248.00	22.00	0.08	1.00	
3375.00	171.00	3315.00	9.04	330.45	60L	3375.00	3385.00	10.00	3385.00	3546.00	161.00	8.00	-0.23	-0.71	
3546.00	85.00	3486.00	7.90	329.48	20L	3546.00	3560.00	14.00	3560.00	3631.00	71.00	10.00	-0.11	-0.67	
3631.00	85.00	3571.00	7.38	329.73	30L	3631.00	3655.00	24.00	3655.00	3716.00	61.00	14.00	-0.04	-0.61	
3716.00	86.00	3656.00	8.28	320.87	20R	3716.00	3736.00	20.00	3736.00	3802.00	66.00	24.00	0.04	1.06	
3802.00	85.00	3742.00	9.00	321.10	80R	3802.00	3810.00	8.00	3810.00	3887.00	77.00	20.00	0.04	0.84	
3887.00	86.00	3827.00	8.46	327.42	20R	3887.00	3899.00	12.00	3899.00	3973.00	74.00	8.00	-0.07	-0.64	
3973.00	171.00	3913.00	8.46	327.42	HSL	3973.00	3985.00	12.00	3985.00	4144.00	159.00	12.00	0.00	0.00	
4144.00	171.00	4084.00	10.37	331.30	170L	4144.00	4154.00	10.00	4154.00	4315.00	161.00	12.00	0.16	1.12	



(Distances are shown in feet.)

Slide Sheet Report

Drilling Services

v4.2.2674

BHA 1 - 2012/10/20 TO 2012/10/22

BIT		SURVEY				----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
4315.00	85.00	4255.00	8.22	330.22	30L	4315.00	4325.00	10.00	4325.00	4400.00	75.00	10.00	-0.21	-1.26	
4400.00	257.00	4340.00	8.67	327.62	30L	4400.00	4408.00	8.00	4408.00	4657.00	249.00	10.00	0.04	0.53	
4657.00	171.00	4597.00	9.40	320.23	90R	4657.00	4663.00	6.00	4663.00	4828.00	165.00	8.00	0.09	0.28	
4828.00	85.00	4768.00	8.24	326.36	HS	4828.00	4834.00	6.00	4834.00	4913.00	79.00	6.00	-0.19	-0.68	
4913.00	85.00	4853.00	8.38	327.48	HSL	4913.00	4923.00	10.00	4923.00	4998.00	75.00	6.00	0.02	0.16	
4998.00	171.00	4938.00	8.61	326.14	HSR	4998.00	5010.00	12.00	5010.00	5169.00	159.00	10.00	0.02	0.27	
5169.00	86.00	5109.00	8.61	328.68	HSL	5169.00	5183.00	14.00	5183.00	5255.00	72.00	12.00	0.00	0.00	
5255.00	85.00	5195.00	8.93	326.64	HS	5255.00	5265.00	10.00	5265.00	5340.00	75.00	14.00	0.02	0.37	
5340.00	85.00	5280.00	8.72	327.91	HS	5340.00	5354.00	14.00	5354.00	5425.00	71.00	10.00	-0.02	-0.25	
5425.00	85.00	5365.00	9.10	327.34	HS	5425.00	5437.00	12.00	5437.00	5510.00	73.00	14.00	0.03	0.45	
5510.00	86.00	5450.00	8.71	331.09	20L	5510.00	5530.00	20.00	5530.00	5596.00	66.00	12.00	-0.03	-0.46	
5596.00	171.00	5536.00	8.84	329.43	30L	5596.00	5626.00	30.00	5626.00	5767.00	141.00	20.00	0.01	0.15	
5767.00	170.00	5707.00	8.36	327.52	20R	5767.00	5787.00	20.00	5787.00	5937.00	150.00	30.00	-0.02	-0.28	
5937.00	257.00	5877.00	6.44	333.26	20L	5937.00	5972.00	35.00	5972.00	6194.00	222.00	20.00	-0.10	-1.13	
6194.00	85.00	6134.00	5.26	325.03	LS	6194.00	6214.00	20.00	6214.00	6279.00	65.00	35.00	-0.03	-0.46	
6279.00	85.00	6219.00	3.28	323.63	130M	6279.00	6293.00	14.00	6293.00	6364.00	71.00	20.00	-0.10	-2.33	
6364.00	36.00	6304.00	1.78	328.86	165M	6364.00	6400.00	36.00	6400.00	6400.00	0.00	14.00	-0.11	-1.76	

Totals:	601.00 ft	4903.00 ft
Percentages:	10.9%	89.1%
Time:	9.25 hrs	22.08 hrs
Percentages:	29.5%	70.5%



Slide Sheet Report

Drilling Services

v4.2.2674

BHA 2 - 2012/10/22 TO 2012/10/25

FILE #: 4027385

JOB TYPE: Horizontal

RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ

COMPANY: Anadarko Petroleum Corporation

SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional

SURVEY TYPE: HEL LWD

FIELD / LOCATION: Wattenburg / CO / USA

Company Man: Duaine Bell, James Nunnelee

DIR Supervisor: Brian Trani, Steven Bumgarner

MWD Supervisor: Denny Palmer

BHA NO: 2	DATES RUN: 2012/10/22 TO 2012/10/25	SECTION: Curve	TOOLFACE OFFSET: 260.1 °	SURVEY OFFSET: 60 ft
MOTOR SETTING: 2.38 °	KICKPAD: No	STABILIZER: No	MODEL: 7/8 5.0 Stg.	SERIAL NO: 675-3996
			BHA SURVEY TYPE: Positive Pulse MWD	

(Distances are shown in feet.)

BIT		SURVEY				ORIENTING			ROTATING			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
6400.00	47.00	6340.00	1.19	328.27	180	6400.00	6447.00	47.00	6447.00	6447.00	0.00	0.00	0.00	0.00	
6447.00	43.00	6387.00	1.82	203.43	180M	6447.00	6490.00	43.00	6490.00	6490.00	0.00	0.00	0.00	1.34	
6490.00	20.00	6430.00	7.26	181.38	HS	6490.00	6505.00	15.00	6505.00	6510.00	5.00	30.00	0.18	12.65	
6510.00	31.00	6450.00	8.91	180.79	HS	6510.00	6533.00	23.00	6533.00	6541.00	8.00	20.00	0.08	8.25	
6541.00	44.00	6481.00	12.49	179.23	HS	6541.00	6575.00	34.00	6575.00	6585.00	10.00	31.00	0.12	11.55	
6585.00	47.00	6525.00	17.10	179.97	HS	6585.00	6618.00	33.00	6618.00	6632.00	14.00	39.00	0.12	10.48	
6632.00	29.00	6572.00	21.30	181.90	HS	6632.00	6661.00	29.00	6661.00	6661.00	0.00	39.00	0.11	8.94	
6661.00	43.00	6601.00	27.42	185.83	30L	6661.00	6704.00	43.00	6704.00	6704.00	0.00	19.00	0.32	21.10	
6704.00	32.00	6644.00	31.28	185.83	45I	6704.00	6728.00	24.00	6728.00	6736.00	8.00	29.00	0.13	8.98	
6736.00	23.00	6676.00	35.84	185.14	30I	6736.00	6747.00	11.00	6747.00	6759.00	12.00	32.00	0.14	14.25	
6759.00	42.00	6699.00	24.61	183.20	30L	6759.00	6801.00	42.00	6801.00	6801.00	0.00	23.00	-0.49	-48.83	
6801.00	53.00	6741.00	51.73	182.14	HSL	6801.00	6826.00	25.00	6826.00	6854.00	28.00	34.00	0.80	64.57	
6854.00	31.00	6794.00	40.35	182.61	30I	6854.00	6885.00	31.00	6885.00	6885.00	0.00	41.00	-0.28	-21.47	
6885.00	22.00	6825.00	40.35	182.61	HS	6885.00	6892.00	7.00	6892.00	6907.00	15.00	31.00	0.00	0.00	
6907.00	20.00	6847.00	41.50	182.00	HS	6907.00	6927.00	20.00	6927.00	6927.00	0.00	1.00	1.15	5.23	
6927.00	63.00	6867.00	42.56	181.73	HS3	6927.00	6970.00	43.00	6970.00	6990.00	20.00	13.00	0.08	5.30	
6990.00	40.00	6930.00	46.55	180.94	HS	6990.00	7008.00	18.00	7008.00	7030.00	22.00	48.00	0.08	6.33	
7030.00	15.00	6970.00	56.99	180.18	HSL	7030.00	7045.00	15.00	7045.00	7045.00	0.00	40.00	0.26	26.10	
7045.00	26.00	6985.00	56.99	180.18	HS	7045.00	7066.00	21.00	7066.00	7071.00	5.00	0.00	0.00	0.00	
7071.00	27.00	7011.00	58.94	179.35	HS	7071.00	7081.00	10.00	7081.00	7098.00	17.00	18.00	0.11	7.50	
7098.00	32.00	7038.00	58.94	179.35	30R	7098.00	7130.00	32.00	7130.00	7130.00	0.00	8.00	0.00	0.00	
7130.00	43.00	7070.00	62.63	179.53	HS	7130.00	7173.00	43.00	7173.00	7173.00	0.00	28.00	0.13	11.53	
7173.00	43.00	7113.00	65.77	180.93	30L	7173.00	7216.00	43.00	7216.00	7216.00	0.00	25.00	0.13	7.30	
7216.00	53.00	7156.00	69.21	182.17	30L	7216.00	7259.00	43.00	7259.00	7269.00	10.00	43.00	0.08	8.00	

(Distances are shown in feet.)

Slide Sheet Report

BHA 2 - 2012/10/22 TO 2012/10/25

Drilling Services

v4.2.2674

BIT		SURVEY				----- ORIENTING -----			----- ROTATING -----			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
7269.00	32.00	7209.00	76.24	181.31	30L	7269.00	7301.00	32.00	7301.00	7301.00	0.00	53.00	0.13	13.26	
7301.00	24.00	7241.00	80.95	181.20	30L	7301.00	7325.00	24.00	7325.00	7325.00	0.00	32.00	0.15	14.72	TD CURVE

Totals:	751.00 ft	174.00 ft
Percentages:	81.2%	18.8%
Time:	27.08 hrs	3.50 hrs
Percentages:	88.6%	11.4%



Slide Sheet Report

Drilling Services

v4.2.2674

BHA 3 - 2012/10/26 TO 2012/10/29

FILE #: 4027385
JOB TYPE: Horizontal
RIG & NO: Xtreme 23

WELL NAME: Palyo 13N-11HZ
COMPANY: Anadarko Petroleum Corporation
SURFACE LOCATION: Weld

SERVICE CO.: Weatherford Directional
SURVEY TYPE: HEL LWD
FIELD / LOCATION: Wattenburg / CO / USA

Company Man: James Nunnelee
DIR Supervisor: Brian Trani, Jacob Hofer
MWD Supervisor: James Witherspoon

BHA NO: 3	DATES RUN: 2012/10/26 TO 2012/10/29	SECTION: Lateral 1	TOOLFACE OFFSET: 82 °	SURVEY OFFSET: 55 ft
MOTOR SETTING: 1.50 °	KICKPAD: No	STABILIZER: No	MODEL: 6/7 7.0 Stg.	SERIAL NO: 475-41092
			BHA SURVEY TYPE: HEL LWD	

(Distances are shown in feet.)

BIT		SURVEY				ORIENTING			ROTATING			SLIDE	BUR	BUR	COMMENTS
DEPTH	DRILLED	DEPTH	INC	AZM	TF	FROM	TO	FEET	FROM	TO	FEET	SEEN	/ft	/100ft	
7325.00	161.00	7270.00	83.56	180.75	90L	7325.00	7335.00	10.00	7335.00	7486.00	151.00	0.00	0.00	0.00	
7486.00	86.00	7431.00	90.00	178.02	20R	7486.00	7498.00	12.00	7498.00	7572.00	74.00	10.00	0.64	4.00	
7572.00	170.00	7517.00	89.82	176.74	20R	7572.00	7582.00	10.00	7582.00	7742.00	160.00	12.00	-0.02	-0.21	
7742.00	86.00	7687.00	91.85	177.43	80R	7742.00	7757.00	15.00	7757.00	7828.00	71.00	10.00	0.20	1.19	
7828.00	85.00	7773.00	93.00	178.07	130R	7828.00	7848.00	20.00	7848.00	7913.00	65.00	15.00	0.08	1.34	
7913.00	85.00	7858.00	93.64	180.24	160R	7913.00	7937.00	24.00	7937.00	7998.00	61.00	20.00	0.03	0.75	
7998.00	86.00	7943.00	92.84	181.80	LS	7998.00	8024.00	26.00	8024.00	8084.00	60.00	24.00	-0.03	-0.94	
8084.00	170.00	8029.00	91.42	183.48	LS	8084.00	8099.00	15.00	8099.00	8254.00	155.00	26.00	-0.05	-1.65	
8254.00	85.00	8199.00	89.14	184.01	40R	8254.00	8269.00	15.00	8269.00	8339.00	70.00	15.00	-0.15	-1.34	
8339.00	86.00	8284.00	88.27	182.13	HS	8339.00	8363.00	24.00	8363.00	8425.00	62.00	15.00	-0.06	-1.02	
8425.00	171.00	8370.00	90.06	181.10	35L	8425.00	8435.00	10.00	8435.00	8596.00	161.00	24.00	0.07	2.08	
8596.00	256.00	8541.00	90.55	178.55	45R	8596.00	8606.00	10.00	8606.00	8852.00	246.00	10.00	0.05	0.29	
8852.00	86.00	8797.00	90.25	180.46	20L	8852.00	8862.00	10.00	8862.00	8938.00	76.00	10.00	-0.03	-0.12	
8938.00	85.00	8883.00	88.89	179.53	20R	8938.00	8953.00	15.00	8953.00	9023.00	70.00	10.00	-0.14	-1.58	
9023.00	86.00	8968.00	89.12	180.19	20L	9023.00	9038.00	15.00	9038.00	9109.00	71.00	15.00	0.02	0.27	
9109.00	85.00	9054.00	89.01	179.10	HS	9109.00	9129.00	20.00	9129.00	9194.00	65.00	15.00	-0.01	-0.13	
9194.00	43.00	9139.00	88.59	177.19	30R	9194.00	9216.00	22.00	9216.00	9237.00	21.00	20.00	-0.02	-0.49	
9237.00	42.00	9182.00	88.09	177.70	20R	9237.00	9247.00	10.00	9247.00	9279.00	32.00	0.00	0.00	-1.16	
9279.00	86.00	9224.00	89.94	177.12	60R	9279.00	9289.00	10.00	9289.00	9365.00	76.00	22.00	0.08	4.40	
9365.00	85.00	9310.00	91.42	176.94	100R	9365.00	9380.00	15.00	9380.00	9450.00	70.00	20.00	0.07	1.72	
9450.00	86.00	9395.00	92.34	177.95	130R	9450.00	9465.00	15.00	9465.00	9536.00	71.00	15.00	0.06	1.08	
9536.00	85.00	9481.00	92.65	180.02	180	9536.00	9558.00	22.00	9558.00	9621.00	63.00	15.00	0.02	0.36	
9621.00	256.00	9566.00	91.42	181.12	180	9621.00	9631.00	10.00	9631.00	9877.00	246.00	22.00	-0.06	-1.45	
9877.00	86.00	9822.00	89.69	182.36	60L	9877.00	9892.00	15.00	9892.00	9963.00	71.00	10.00	-0.17	-0.68	

Slide Sheet Report

BHA 3 - 2012/10/26 TO 2012/10/29

(Distances are shown in feet.)

BIT DEPTH DRILLED	SURVEY					----- ORIENTING -----			----- ROTATING -----			SLIDE SEEN	BUR /ft	BUR /100ft	COMMENTS
	DEPTH	INC	AZM	TF		FROM	TO	FEET	FROM	TO	FEET				
9963.00	85.00	9908.00	89.47	181.25	HS	9963.00	9983.00	20.00	9983.00	10048.00	65.00	15.00	-0.01	-0.26	
10048.00	86.00	9993.00	88.77	179.79	HS	10048.00	10072.00	24.00	10072.00	10134.00	62.00	20.00	-0.04	-0.82	
10134.00	170.00	10079.00	89.51	177.61	60R	10134.00	10152.00	18.00	10152.00	10304.00	152.00	24.00	0.03	0.86	
10304.00	85.00	10249.00	92.96	177.77	130R	10304.00	10332.00	28.00	10332.00	10389.00	57.00	18.00	0.19	2.03	
10389.00	86.00	10334.00	91.30	179.48	130R	10389.00	10401.00	12.00	10401.00	10475.00	74.00	28.00	-0.06	-1.95	
10475.00	85.00	10420.00	88.77	180.51	20R	10475.00	10493.00	18.00	10493.00	10560.00	67.00	12.00	-0.21	-2.94	
10560.00	86.00	10505.00	89.38	179.13	45R	10560.00	10580.00	20.00	10580.00	10646.00	66.00	18.00	0.03	0.72	
10646.00	85.00	10591.00	91.11	179.28	90R	10646.00	10666.00	20.00	10666.00	10731.00	65.00	20.00	0.09	2.01	
10731.00	86.00	10676.00	92.96	180.93	170R	10731.00	10751.00	20.00	10751.00	10817.00	66.00	20.00	0.09	2.18	
10817.00	85.00	10762.00	92.22	181.48	LS	10817.00	10845.00	28.00	10845.00	10902.00	57.00	20.00	-0.04	-0.86	
10902.00	85.00	10847.00	90.86	183.11	135L	10902.00	10918.00	16.00	10918.00	10987.00	69.00	28.00	-0.05	-1.60	
10987.00	86.00	10932.00	87.72	183.41	45L	10987.00	11012.00	25.00	11012.00	11073.00	61.00	16.00	-0.20	-3.69	
11073.00	85.00	11018.00	87.04	180.94	HS	11073.00	11098.00	25.00	11098.00	11158.00	60.00	25.00	-0.03	-0.79	
11158.00	85.00	11103.00	87.18	178.42	HS	11158.00	11183.00	25.00	11183.00	11243.00	60.00	25.00	0.01	0.16	
11243.00	85.00	11188.00	88.09	178.60	30R	11243.00	11268.00	25.00	11268.00	11328.00	60.00	25.00	0.04	1.07	
11328.00	151.00	11273.00	89.32	180.96	HSR	11328.00	11342.00	14.00	11342.00	11479.00	137.00	25.00	0.05	1.45	

Totals:	708.00 ft	3446.00 ft
Percentages:	17.0%	83.0%
Time:	16.83 hrs	25.17 hrs
Percentages:	40.1%	59.9%